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THE NATIONAL EDUCATIONAL EMERGENCY AND A FEDERAL PROGRAM

Testimony on the disruption of the school system continues to pour in from all quarters. It is important at such a time that some central agency take systematic account of changes and conditions. This service is being rendered both by the United States Office of Education and by the National Education Association working through its Joint Commission on the Emergency in Education, often in co-operation. A recent release from the Office of Education summarizes as follows "The Situation in the Schools."

SCHOOLS CLOSING

770 schools are now closed with no provision for 175,146 children.

1,540 schools will have terms of three months or less.

10,982 schools will have terms of three to six months.

UNEMPLOYMENT

City schools employ 18,000 fewer teachers now than in 1930.

200,000 certificated teachers are unemployed.

SCHOOL BUDGETS

City school budgets average 20 per cent reduction since 1930.

Schools now operate on \$368,000,000 less than in 1930.

Expenditures for new buildings have dropped 79 per cent since 1930.

TEACHERS' SALARIES

45,228 teachers will receive less than \$300 this school year (if paid).

210,120 teachers will receive from \$300 to \$750 this school year. (One in four receive less than the minimum code wage.)

QUALITY OF EDUCATION

Since 1930 in 700 typical cities—

103 had reduced art instruction.

139 had reduced music instruction.

109 had reduced physical-education instruction.

111 had reduced health instruction.

84 had reduced home-economics instruction.

In 1933 many counties reported lowered qualifications for rural teachers.

Textbook purchases dropped one-third from 1930 to 1932, and the lack of other equipment is abnormal.

COLLEGES AND UNIVERSITIES

16 institutions of higher education have been discontinued since last year, mostly by merging with some other school.

Colleges have reduced their teaching force by about 5,680 teachers in the past two years.

In the past two years there has been a decrease of about \$56,860,000 in college budgets for educational and general expenditures, and expenditures for capital outlays have practically ceased.

These conditions prompted the United States Commissioner of Education, George F. Zook, to call together a Federal Advisory Committee on Emergency Aid in Education, including broad representation from both lay and professional groups. At its final session on January 6 the committee proposed a six-point program to meet the immediate crisis, the provisions of which we quote in full.

1. The emergency problem of keeping elementary and secondary schools open on as nearly normal a basis as possible during the school year 1933-34 should be met by a federal appropriation of \$50,000,000 to be allocated according to emergency needs in the several states. This sum may be provided in one of two ways: (a) by a special provision in the relief act or, less preferably, (b) by a separate federal appropriation. In either case such appropriation shall be administered preferably by a board of which the United States Commissioner of Education shall be chairman and executive officer.

2. In view of the fact that the inability of many communities adequately to maintain schools is certain to continue during the fiscal year 1934-35 a federal emergency appropriation or allocation of not less than \$100,000,000 should be made available beginning July 1, 1934; this appropriation or allocation to be distributed in an objective manner, determined by a board of which the United

States Commissioner of Education shall be chairman and executive officer, and based upon reasonable evidence of needs and resources.

3. That the instability of educational support even in the abler states and communities, due to the shrinkage of local ability to support schools during the depression, constitutes an aspect of the present emergency of such proportion as to endanger the effectiveness of the schools throughout the nation. The fundamental relief which is necessary in order that public educational institutions may be adequately supported can be secured only through the adoption of measures for the federal emergency aid to education during 1934-35. The situation is so critical in education that the people are justified in using federal funds to insure the normal operation of schools. Accordingly, it is recommended that a substantial sum be distributed from the federal treasury to the various states to assist them in meeting this phase of the emergency.

It is the sense of this conference that the method of distribution should provide, first, that a flat sum objectively determined be distributed to all states; second, that a supplemental sum objectively determined but weighted to meet the needs of the poorer states be included in the distribution; and, third, that the method of distribution be stated in the statutes, provided that a contingent fund not to exceed 10 per cent of the amount so provided for 1934-35 be reserved for distribution to states and local units to meet exceptional and unforeseen needs under the direction of a board of which the United States Commissioner of Education shall be chairman.

4. Local funds should be released for school maintenance by (a) refinancing school-district indebtedness or such municipal or county indebtedness as may have been incurred in behalf of the schools; (b) providing federal loans to school districts or to municipal or county corporations, where (in the case of the latter) the loan is to be used for educational purposes; *provided* that in both instances the loan shall rest on the security of delinquent taxes, frozen assets in closed banks, or other acceptable securities.

5. Out of any new appropriations made for public works not less than 10 per cent should be allocated for buildings for schools, colleges, and other educational enterprises. Such grants shall be available provided that an approved survey has been made and that the survey shows the need for the buildings. In cases where such surveys have not already been made, these surveys shall be made under the direction of the Office of Education through a decentralized regional organization. The cost of these surveys shall be charged to the public-works appropriation for school plants. We recommend that the grants for such projects be made on a 100 per cent basis. In administering this fund, major attention should be given to the needs of the rural schools.

6. A federal appropriation or allocation of \$30,000,000 should be provided to assist students to attend institutions of higher education for the period ending July 1, 1935, by (a) special provision in existing acts or (b) by a separate federal appropriation. This fund should be administered by the United States Office of Education.

The program deserves the unanimous support of all friends of education. The most potent method of supporting it is by influencing the members of the Congress.

INFORMAL TUITION IN COURTESY

During the spring of 1933 the student council at Central High School in Minneapolis conducted a courtesy campaign. A questionnaire was sent to each pupil and teacher asking them to list discourtesies that they had noticed. The responses were assembled, and a committee of pupils and faculty decided that, if the recurrent discourtesies were presented to the pupil in such a way that he might know the correct thing to do, the campaign might have lasting effect. The campaign included posters, assembly programs, feature articles in the *Central High News*, a "Thing-To-Do" column on the editorial page, slogans written on blackboards and changed daily, and publication of a "courtesy booklet" entitled *The Thing To Do*.

The booklet is so cleverly executed as to merit special mention. The cover, carrying the title only, is in the school's colors. The text deals with problems of courtesy in about a dozen different situations, for example, "In the Halls," "In the Library," "In the Lunchroom," "In the Assembly," "At the Dance," "About Introductions," and "About Telephoning." Each situation is approached in two ways: first, by relating the entertaining adventures of a fictitious youth, Sylvester, whose manners are hardly to be emulated and, next, by indicating briefly the proper thing to do in the situation. Several of the narratives of Sylvester's adventures are accompanied by simple but amusing drawings intended to attract the pupil's attention to the situations depicted. A charge of ten cents is made for the booklet to cover cost of publication. Copies may be secured from Miss Marie A. McGrath, faculty adviser on the project.

HIGH-SCHOOL INSTRUCTION BY MAIL

Walter H. Gaumnitz, specialist in the problems of rural education in the United States Office of Education, has put practical school workers and others under obligation to him by preparing what is in effect a brief and compact guidebook to correspondence study at the high-school level. The publication referred to is entitled *High-School*

Instruction by Mail—A Potential Economy and is issued as Bulletin Number 13, 1933, by the Office of Education. Its purpose is "to show how correspondence courses and the correspondence technique may be used to effect economies both in terms of rendering for less money school services which are already being provided and at the same time to extend such services to persons and areas which are not now being reached." The content of the bulletin is organized to answer certain essential questions concerning correspondence study. These questions, which become the chapter headings, read as follows: "Is High-School Instruction by Correspondence Feasible?" "What Economies Are Possible in Secondary Education through Correspondence Courses?" "Where May Reliable High-School Correspondence Courses Be Obtained?" "What of the Quality of High-School Correspondence Courses? How Can These Courses Be Improved?" "Are High Schools Using Correspondence Courses? Where? With What Success?" "What Administrative Problems Are Involved in the Use of Correspondence Lessons in High Schools?" A list of annotated references on the subject is also included.

The possibilities of high-school instruction by mail has been so well summarized that we quote the portion of the Introduction in which the summary is presented.

During this time of economic stress more than ever before educational authorities are under obligation to effect every possible economy in the administration of public education. One such economy which has been widely suggested and which is being tried out in an increasing number of localities and with a growing variety of objectives is the use of high-school instruction by correspondence. It should be recognized at the outset that it is not the purpose here to suggest that high-school education by mail can or should be substituted in lieu of the regular instruction in residence. So far as the facts are known to the author comparatively little of such substitution has been advocated or has taken place. The movement of using correspondence lessons to provide instruction on the high-school level has made its greatest progress and has received its greatest indorsement because it has been recognized that here is a means of improving our present practices of secondary-school administration, of enriching its offerings, and in numerous ways of extending its services. The use of correspondence lessons in high school originally attracted interest because of its possibilities of supplementing our present high-school program. But more and more school men are recognizing in this service some real economies in the whole scheme of secondary education. Correspondence lessons as such and the cor-

respondence technique of instruction are rapidly gaining recognition because they have been found to serve the following general purposes:

1. To eliminate many inordinately small classes, especially in the junior and senior years of large high schools and in all grades of the smaller high schools. The resulting increase in the pupil-teacher ratio naturally reduces the cost.

2. To enrich the offerings of the smaller high schools and to furnish unusual courses in the larger ones, thus more closely fitting the school program to the various needs of those seeking to continue education to this level.

3. To make it possible for the high school to meet the demand for vocational, technical, and other fields of instruction more closely related to practical everyday living.

4. To provide a means for recognizing individual differences in instruction and in student progress.

5. To serve as a means of providing post-high-school education to persons who have graduated from high school, who are unemployed and who cannot afford to go to college. This objective is particularly attractive in localities where the school plant is overcrowded and the existing staff is overloaded.

6. To provide high-school education to persons who for a great many reasons stopped short of high-school graduation and who because of unemployment, additional leisure, the desire to remove college-entrance deficiencies, etc., wish to resume their interrupted education.

7. To extend some rudiments of secondary education to persons living in sparsely settled areas or at isolated points where it would be uneconomical to undertake the assembling of classes for high-school work.

8. To provide evening-school, continuation-school, and extension services in localities where regular classes are too small and the need too diversified to warrant such regular classes. School systems now finding it necessary to curtail these types of school services are finding correspondence lessons a means to continue a part of the work on a more limited basis.

9. To facilitate the instruction of persons who are crippled, invalided, or who for other reasons are either permanently or temporarily prevented from attending school regularly.

10. To provide a means of adult education. This latter function has long been served by the various agencies furnishing correspondence courses.

A good many of the uses and possibilities of correspondence courses on the high-school level cited above as urged by advocates of this departure in education have received considerable impetus from the economic depression. Our general economic scheme is geared toward more and more unemployment. Even before the depression technical developments were constantly displacing the services of men and women with machinery. The invention and installation of automatic devices which lift the burdens from the backs of men are at the same time certain to result in a serious social problem, namely, the employment of fewer and fewer people per unit of commodity produced. This is true in all departments of production. Agricultural activities, construction work,

mining operations, and manufacturing enterprise, all can produce more and more of the commodities needed with less and less man power. This means that social institutions must assume greater and greater responsibilities both for the development of youth to fit them into the constantly changing and growing complexity of society and for the greater leisure for all which must inevitably result from these changes.

With the present problem of unemployment it is being widely urged that the upper level of public education be raised to the completion of high school if not through junior college. The argument is that the longer we keep our young people in school, the longer we keep them either out of the ranks of the unemployed themselves or we keep them from displacing employed men and women who have family responsibilities. Then, too, the growing complexity of life seems to demand longer periods of preparation.

The tendency, therefore, is to impose greater responsibilities upon the public schools at the very time when they are faced with the task of reducing their staffs, with curtailing the expansion of building and equipment, and, in general, with effecting budgetary savings. Not only are the schools compelled to find ways and means of spending fewer tax dollars, but they must find methods of making these fewer dollars do the work which larger funds did before.

Industrial codes now being adopted and which rule out child labor will greatly augment the numbers of children who will continue their education.

This bulletin may be procured from the Superintendent of Documents in Washington, D.C., for ten cents.

A PICTORIAL BROCHURE ON THE SOCIAL TRENDS

This section of the February *School Review* noted the appearance of a number of publications bearing on instruction in the social studies, which from all indications are due for a new emphasis in the schools. If it had appeared in its revision a few days earlier, *Youth Inspects the New World* would have been included for brief description. This publication is a profusely illustrated brochure on recent social trends prepared for appeal to young people. The brochure opens with an introduction on "Purpose and Plan" by Professor William F. Ogburn, of the University of Chicago, research director of the Hoover Committee on Social Trends. Subsequent sections deal with "The Modern City," "Making a Home," "Making a Living," "Keeping Healthy," "Getting an Education," "Using Leisure," "Governing Ourselves," "Being Good Neighbors," and "Making a Better World." The closing section on "Group Program Suggestions" outlines possibilities of study in the field by voluntary groups,

such as Hi-Y clubs, Girl Reserves, and other young people's organizations.

The textual content is compactly informative at the same time that it is popularly written. Most of the space, however, is taken up by illustrative material reproducing splendid photography (including some telling contrasts), clever symbolic drawings with modernistic flavor, and illuminating graphical devices. Photographic illustrations are drawn largely from the Chicago area. The publication is not usable as a textbook but is suitable for supplementary material for such courses in the social studies as community civics, sociology, and problems of democracy. One can imagine its being effectively used in connection with the opening unit in community civics, in which the purpose would be to disclose the nature and the purpose of the course.

The textual matter was prepared by Charles E. Hendry, the photographic illustrations were assembled by Richard O. Niehoff, and the drawings made by Harold Haydon. Publication is by Roy Sorenson at 19 South La Salle Street, Chicago. The price is seventy-five cents.

INSTRUCTION IN HEALTH IN HIGH-SCHOOL GRADES

Persons concerned with the problem of instruction in health in the high school will profit from a careful reading of a recent publication of the United States Office of Education, *Health Instruction in Grades IX-XII*, by James Frederick Rogers, consultant in hygiene. The publication is Pamphlet Number 43 and is distributed by the Superintendent of Documents, Washington, D.C., at a charge of five cents a copy. The content deals with hygiene only and is not concerned with problems in physical training. Among the titles of section headings are the following: "The Struggle of Hygiene for a Place in the High-School Program," "Health Instruction in the Last Two Grades [of the Elementary School]," "General Science and Biology," "Home Economics," "Present Teaching Materials," "What the Student Should Be Taught," "Scope and Limitations of Health Instruction," "Time Devoted to the Subject," and "Co-ordination and Correlation of Health Work."

The author has packed into this modest pamphlet a large amount

of information on the status, practices, and possibilities in health instruction. One might wish that he had been given more space for a more nearly complete discussion of the whole problem and its relations to other features of the school program. Restriction of consideration largely to the grades of the four-year high school precludes adequate canvass of the contributions made to instruction in health by the junior high school. To be sure, a section on health instruction in the last two grades of the eight-year elementary school is included, but this treatment does not touch on what many junior high schools are accomplishing in these grades and in the ninth grade. Many of the better junior high schools have strengthened the program of health instruction as compared with what is done at this level in schools conventionally organized. Enrichment has been accomplished in subjects set up for the purpose and also as important elements of other more comprehensive courses. As examples of the latter practice, one may mention the units on public health in the courses in community civics (or fusion courses in the social studies) and on hygiene and public health in courses in general science.

THE HIGH-SCHOOL GRADUATE AND THE DEPRESSION

These are times when many persons grow impatient with social, inclusive of educational, research. Social changes are so rapid that conclusions from investigations made in what are termed "normal" times no longer apply and new investigations cannot keep pace with the needs of the day. Easily disillusioned, the persons mistrusting research turn away from those who investigate to those who merely make best guesses that are presumed to be short cuts to truth—guesses which are glorified by the label "philosophy." We would not contend that best guessing is unnecessary: it must be resorted to in order to fill the many lacunae left by programs of research which are still far from comprehensive of the issues involved—and such lacunae are more apparent during periods of rapid reconstruction like the present.

This observation is made by way of preface to a quotation from a follow-up study of high-school graduates in Minneapolis. The study is recent enough to throw light on the changing fates of graduates as wrought by the depression; in fact, it discloses the trends in these

fates by reporting evidence for three graduating classes, those of 1926, 1929, and 1932. The point is that conclusions from such a study are vastly superior to the superficial subterfuge of sheer guessing about what is happening to these graduates and what should be done for them.

The study is reported in the January number of the *Vocational Guidance Bulletin*, published by the Minneapolis Public Schools. It is to be regretted that the report cannot be quoted in full. In particular, all the tables and portions of the text are here omitted.

How made.—This follow-up study of the high-school graduates from the January and June, 1932, graduating classes was carried on between May and October, 1933, by the Placement Department and the counselors. It has been customary to do this every three years, so that now comparative figures are available for the classes of 1926, 1929, and 1932. The information was secured by writing letters to all graduates, telephoning those who did not respond, and then through the counselors in the schools getting in contact with those who still had not responded. In this way contact was established with 89 per cent of those who were on the graduating lists of the Minneapolis schools in 1932. Information was obtained from them as to what they had been doing since leaving school, including data regarding school attended, job held, wages, etc. The percentage contacted was practically the same as in 1929. . . .

General distribution.—The eight Minneapolis high schools gave diplomas to 3,657 students in January and June, 1932. This was an increase of 25 per cent over the number of pupils who were graduated in 1929. Undoubtedly, this increase is due to a variety of causes, including the increased number of young people in the city of high-school age, the growing feeling that all pupils should finish high school, the lack of opportunities to obtain work during these years, and perhaps to the more effective manner in which the schools are meeting the varied needs of larger numbers of pupils. Fifty-five per cent of those who graduated were girls, 45 per cent were boys. More girls than boys appeared on the lists of candidates for diplomas in both 1926 and 1929. In other cities also the high schools seem to serve girls better than boys, if this may be judged by the tendency for a larger proportion of girls to stay on until graduation.

To enter the university or to get training in some advanced school such as a teachers' college or an art school is the avowed aim of most high-school Seniors, and we are likely to assume that pupils carry out these plans. This follow-up study showed only one-third of the pupils who graduated from our high schools in 1932 to be attending some advanced school. In view of the emphasis that high-school teachers and parents put upon meeting college-entrance requirements, this is a surprisingly small percentage. It is, however, a slight increase over the percentage reported in 1929, but this is due to the increased number of postgraduates in our high schools last year, rather than to a real increase in

attendance at university or other advanced schools. The proportion of boys going on to school is noticeably greater than that of girls (38.8 per cent of boys, 30 per cent of girls). This tendency has been apparent since 1926, but the spread between boys and girls is greater now than it was in 1929 or 1926.

Extent of unemployment.—The difficult plight of the pupil who is unfortunate enough to finish school during these years of depression is indicated in the fact that less than one out of five of the high-school graduates had found work when this survey was taken. The study of 1926 graduates showed 38 per cent at work; the study of 1929 graduates made in 1930 when it was expected that the depression would have influenced these figures, showed 45 per cent at work. This class studied in 1933 shows only 18.8 per cent able to find jobs. The boys fared better than the girls, for 21.9 per cent of the boys were at work as compared with 16 per cent of the girls. In 1926 and 1929 practically the same percentage of boys as girls were at work.

The difficulty is further emphasized in the fact that almost one out of three of these young people was unemployed and seeking work a year after they had completed school. Over 1,100 such young people from just two graduating classes makes us realize the seriousness of the social problem that faces the community in the enforced idleness of its older adolescents. The percentage of unemployed jumped from 8.4 per cent reported in 1929 to 30.9 per cent. Thirty-five per cent of the girls have failed to find work, as against 25 per cent of the boys. Either boys are more enterprising, or in a period like this the tendency is for girls to be pushed back to the home life of an earlier decade, while the men and boys are given whatever jobs there are. There was no significant sex difference in the percentage unemployed either in 1926 or 1929. . . .

Differences in high schools.—Great variations among schools are apparent when the same type of analysis is applied to the eight high schools. These differences ought to give some guidance in meeting curriculum needs in various parts of the city, and it would appear that some definite differences in curriculum in these schools could be defended if these various schools are to meet the actual needs of the pupils who graduate from them. The variations among the schools undoubtedly result from the economic and social differences in the communities in which the high schools are located, and it is evident that the pupils coming from the poorer districts are finding the problems of adjustment most difficult. West High School has the largest percentage at school, and the smallest percentage at work and unemployed, with Washburn High School ranking as a close second. The position of these schools was reversed in 1929. The percentage of pupils going on to school from Marshall High School has increased decidedly in the last three years.

As would be expected from the location of the schools, Edison and South High Schools have the smallest percentage of pupils going on to school (Edison 18.9 per cent and South 17.6 per cent) and the largest percentage of unemployed (Edison 42.4 per cent and South 40 per cent). Undoubtedly, classes for unemployed young people are needed in these districts, as well as at North and Cen-

tral High Schools where the number of unemployed as well as the percentages are large. Classes for unemployed young people financed by federal funds are already in operation at Edison, North, Central, and Roosevelt High Schools, with plans under way for classes in the South High School district.

Types of schools attended.—For these pupils who go on to school after finishing high school, high-school courses must be planned to meet entrance requirements of the schools the pupils wish to attend. . . . Twelve hundred forty pupils or one-third of the graduates went on to school. Eight hundred thirty pupils or 66.9 per cent of those who went on to school entered the University of Minnesota. This shows that meeting University entrance requirements should be the main concern in setting up the educational guidance for that group who will go on to school. About 10 per cent of those who attended school entered some other institution of collegiate ranking. Carleton, Hamline, Macalester, St. Thomas each received a small number. Colleges farther away, like Drake, Harvard, Antioch, Smith, University of California, attracted not more than one or two pupils each. This indicates that meeting entrance requirements of colleges outside the state is the individual problem of some few pupils but does not involve any number of students. During the last two years Minneapolis high schools have allowed postgraduates to return without paying tuition. One hundred thirty-seven pupils had returned as postgraduates and were attending when this study was made. This was 11 per cent of the total number who took further training.

Those attending all other institutions were grouped together and totaled 12.2 per cent of those who went on to school. This grouping included the more specifically vocational schools, such as teachers' colleges, nurses'-training schools, business colleges, and trade schools. The number who had attended business college may be somewhat low, for some students completed a course in business college and were either at work or unemployed at the time of this follow-up. More girls than boys attended these schools.

Kinds of jobs obtained.—The day when a high-school graduate could decide what type of work he wanted to get into and get a position in that line is over, temporarily at least. Now our young people are putting preference and interest and even fitness aside and accepting any job they can get whether or not it is in line with their abilities or interests. This survey found them scattered in all kinds of work from day labor to professional dancing. They are not concentrated in two or three occupational groups as they were in 1929 but are scattered more equally in all classes of occupations.

Office-work provided an occupational outlet for the greatest proportion of those who found work, although the percentage who were engaged in this work dropped from 54.91 per cent in 1929 to 24.4 per cent in 1932. More girls than boys were found in offices, but not anywhere near all the girls trained in stenographic work had found positions.

Sales jobs, including selling in stores, canvassing, and grocery-store work, were held by the next largest percentage (23.3 per cent). About an equal per-

centage of boys and girls were found in this type of employment. The percentage of students employed as messengers was negligible; it had decreased since 1929. Those employed in the trades, including those acting as helpers to skilled workers, were only 4.1 per cent. The boys in this group reported a variety of jobs; the girls were in dressmaking and beauty culture. Ten per cent of those who found work were employed in factories. This is a far larger percentage than in 1929. Tending a knitting machine, mating stockings, and other such jobs were frequently listed in this group. Domestic and personal service also provided jobs for more people in this survey than in 1929. Many girls have been glad to take housework positions at very low pay, and boys were glad to act as bus boys and waiters when the opportunity presented itself. Among those listed in agriculture and forestry were about twenty boys who were in the Civilian Conservation Corps. The miscellaneous group, which included 12.7 per cent of those who had jobs, were employed at driving trucks, doing day labor with road crews, caddying, and other jobs that could not be classified in the other groups.

The wages data were not sufficiently complete to be tabulated, but reports came in of students who were doing housework for \$1.50 a week and living expenses, factory workers getting about \$8.00, office-workers getting as little as \$9.00 and as high as \$16.00 a week. Much of the information about wages was obtained before the NRA codes were adopted. . . .

Conclusion.—The need for an educational program such as has been set up in Minneapolis under the Commission for Unemployed Youth is clearly and emphatically apparent in this survey. Over 1,100 young people from these two classes are still unoccupied, and many of them will become unemployable and permanent social misfits if they continue to be unwanted anywhere in the scheme of things.

Pupils from the better districts of the city have in general fewer problems, for their parents make every effort to send them on to school. If this is impossible, their parents, relatives, and influential friends turn their way whatever jobs are available. Those pupils who are less favored find themselves in a more difficult plight, and among them unemployment is especially high.

Girls seem to be retiring to the home and taking up household tasks. They are apparently finding the adjustment to the economic ills of the day easier than are the boys. Whether this trend in regard to employment of girls is permanent cannot be determined at this time.

Choosing a vocation is just a theoretical consideration with pupils who leave school during these years. What they are seeking is a job, any kind of a job, no matter what its status or how well it fits their abilities. No longer are there types of work which the high-school graduate considers beneath him. He is to be found in increasing proportion in the more menial occupations.

The study contains real food for creative thought. Although significant inferences have been drawn, the author probably would not

contend that further pondering of the evidence would not yield additional implications for the schools and for society. Perhaps nothing is clearer than that opportunities for free education suitable for young people out of high school must be provided in junior colleges or elsewhere, and it is reassuring that the Governor's Commission on Unemployed Youth is undertaking to solve the problem in Minnesota. The nature of the education needed is not so apparent from the evidence, except that constructive recreation must be represented in it. The problem of projecting adequate programs of occupational training and of guidance, as one may infer from the author's treatment, has been greatly complicated in recent years. Moreover, the significance of the study runs far beyond changes within the schools and calls for readjustments in our society that will provide conditions better suited to these critical years in the lives of that portion of our population just on the threshold of adulthood. In general, the very significant results of this study lead one to hope that similar investigations will be undertaken in a number of other local situations.

ON PROCEDURES IN STUDYING THE GROWTH OF GIRLS

Among the articles in this issue is a brief criticism by Frank K. Shuttleworth of certain aspects of procedure followed by G. E. Van Dyke in a study of the relation of menstruation to the growth of girls published in the *School Review* for March, 1930—just four years ago. The manuscript of the present article was submitted to Mr. Van Dyke, and we have permission to quote from his letter in response.

The criticism offered by Shuttleworth is well taken, I am sure. Chronological age certainly is an important factor to be considered in a study of physical development and probably was the basis for the selection of a "fairly homogeneous group" in Baldwin's studies. Failure to hold age constant in that part of my study which attempted to show the relationship between height and weight of girls and maturity is a shortcoming of that comparison. . . . Although it is my toe that is being stepped on, the attitude of critical analysis shown by Shuttleworth certainly should be commended. . . .

The comparison made by Shuttleworth is open to criticism because of the fact that his reclassification of cases includes the measurements of girls both before and after the reaching of maturity. In a study attempting to show the relationship between height and weight and the advent of maturity, it seems to

me that measurements of girls after maturity has been reached should not be included.

Perhaps there is something of extenuation of the mistake in procedure by Mr. Van Dyke in the fact that the study under question was the first ever published by him and was made during the earlier period of his graduate study. Under the circumstances, it was fortunate that he reported all the raw data so that interested persons could verify important aspects of the investigation.

A TIMELY CONFERENCE ON BUSINESS EDUCATION AND THE CONSUMER

During the summer quarter of 1933 the School of Business of the University of Chicago sponsored its first conference on business education. This conference, which attracted nation-wide interest among teachers of business, dealt with the general problems of the reconstruction of business education at the secondary level. Announcement has been made of the second conference to be held at the University on June 27 and 28 this year. The central theme of this second conference will be very timely and vital, "Business Education and the Consumer." As the program reproduced below indicates, two major aspects of the problem will be considered, namely, the position of the consumer and the status and means of consumer education.

Wednesday Morning, June 27

THE POSITION OF THE CONSUMER

H. G. Shields, Assistant Dean, School of Business, University of Chicago, Presiding

"Consumer Resources and Incomes," Paul H. Douglas, Professor of Economics, University of Chicago

"Types of Information Available to the Consumer," Hazel Kyrk, Associate Professor of Home Economics and Economics, University of Chicago

"The Deception of the Consumer," Joseph Grein, City Sealer, Chicago

Wednesday Afternoon, June 27

Mrs. Marion F. Tedens, Supervisor of Typewriting, Chicago Public Schools, Presiding

"Economic Organization from the Consumer's Point of View," Leverett S. Lyon, Executive Vice-President, Brookings Institution, Washington, D.C.

"The Recovery Program and the Consumer," W. H. Spencer, Dean, School of Business, and Professor of Business Law, University of Chicago

Thursday Morning, June 28

STATUS AND MEANS OF CONSUMER EDUCATION

Paul Carlson, Director of Commercial Education, State Teachers College, Whitewater, Wisconsin, Presiding

"The Extent to Which Business Educates the Consumer," James L. Palmer, Professor of Marketing, University of Chicago

"Consumer Education in the Secondary Schools," Leonard V. Koos, Professor of Secondary Education, University of Chicago

Thursday Afternoon, June 28

W. S. Gray, Professor of Education, University of Chicago, Presiding

"Consumer Education through Social-Business Education," H. G. Shields, Assistant Dean, School of Business, University of Chicago

"Practical Methods in Consumer Education in the Schools," Henry Harap, Associate Professor of Education, Western Reserve University, Cleveland, Ohio

The published announcement also mentions a one-day session on "The Direct Method of Teaching Shorthand" that will precede the conference; lists the courses in business education that will be offered by the School of Business during the summer quarter in the belief that many teachers will wish to spend the summer in Chicago because of the continuation of the Century of Progress Exposition; and refers to a full program of courses that will also be offered in finance, marketing, transportation, and other fields of business. Information concerning these courses may be secured by addressing the School of Business of the University of Chicago.

THE TRAINING OF SECONDARY-SCHOOL TEACHERS IN PRUSSIA—SOME IMPRESSIONS

ESTHER CRANE
Goucher College, Baltimore, Maryland

INTRODUCTION

The stern and dogmatic Prussian pedagogue, with his military discipline and memoriter methods, has been so familiar a figure in American thinking that, when I began to visit German schools, I was amazed to find that he seemed to have vanished as completely as if he had been a myth. Instead of the anxious strain I had expected to find in the classroom, there was a happy, friendly atmosphere, in which the pupils competed for the attention and the approval of their teacher. There was earnest effort, and even great pressure, but it was the joyous, vigorous intensity that is commonly found in athletic contests. Though all the teachers I saw permitted more freedom of speech and movement than is usual in American schools, I saw only a few pupils who were inattentive and none who were making a noise for the sake of creating a disturbance. Most of the children were so eager to talk that they interrupted each other and interrupted the teacher, and many called out answers together.

When I began to ask whether the repressive Prussian pedagogue had been a myth or whether he had actually been the typical German teacher only twenty years ago, I was assured by many school authorities that there had been a fundamental change in education since the World War. They said that, although there had been some liberal teachers before the war, especially in girls' schools, most teachers at that time had been of the dogmatic type. The revolution, however, gave enough strength to the liberal group so that their long cherished desires for reform found official expression in the "Suggestions for the Curricula of the Secondary Schools of Prussia," which were approved by the Prussian Ministry of State on April 4, 1925. This document recommends that the old memoriter system should be

abandoned as far as possible and should be replaced by "activity instruction."¹ That type of instruction is described as follows:

It demands from the teacher that he, in the selection of material, never consider solely the transmission of knowledge as the purpose of his work but that he be sure what powers of the pupil can be developed and increased by the school activity, especially independence of judgment, disposition, imagination, and will. The principle of "activity instruction" renders it necessary to organize the class activity into a community of activity of the pupils in a mutual give-and-take under the direction of the teacher. It is a question of giving this work a direction which is appropriate at once to the nature of the pupil and to the educational objective of the school. To bridge the natural gap between the acquisition of definite knowledge, without which higher intellectual activity is not possible, and the acquisition of the ability to do independent work, without which knowledge remains unproductive, is the earnest and great purpose of "activity instruction."²

Since in the two summers I had spent visiting German schools I had seen only one teacher of the drillmaster type, I found it difficult to believe that the change had actually been of recent occurrence. I was assured that I had undoubtedly been shown by each principal only the younger teachers and those older teachers who were using the new methods. It was explained to me that there were still many teachers of the older type, who were able to obtain good formal work by their old-fashioned methods but who were unwilling or unable to use the newer methods of teaching. Therefore, the school authorities had decided not to interfere with these teachers but to concentrate effort on teaching the newer methods to all the young candidates preparing to enter the teaching profession.

Still I was surprised that they had been able to train all their younger teachers to employ this "activity instruction" and the other modern methods which I saw in use. For many years in America we have been trying to show students in education that they should not be content to give their own pupils great masses of information but should teach pupils to use that information. As students of edu-

¹ The German word is *Arbeitsunterricht*. It is one of the terms which I heard most frequently and evidently expresses one of the most important ideals of the German educators.

² *The Reorganization of Education in Prussia: Based on Official Documents and Publications*, p. 319. Translated by I. L. Kandel and Thomas Alexander. New York: Teachers College, Columbia University, 1927.

cation, they learn to criticize those teachers who are content to pour out statements, which the classes must preserve in their memories and later return for the teachers' approval. Yet each year many of these critical students go forth and allow themselves to become teachers of the same lesson-hearing type which they have bitterly criticized. After all, to enforce memorizing is much less trouble than to develop independent judgment; to ask pupils to repeat their lessons from memory is much easier than to teach them to solve problems. Therefore, I was surprised to find that these German school authorities felt absolutely confident that all the younger teachers entering their schools would use this "activity instruction" which they had been taught. I determined to study their methods of training secondary-school teachers.

TRAINING TEACHERS FOR GERMAN SECONDARY SCHOOLS

Since 1890 Germany has demanded that all teachers in secondary schools have two years of professional training in addition to their work in the university. Before the prospective teachers can enter this professional training, they must pass a state examination in three subjects commonly taught in the secondary school. I was told that this professional examination is so much more difficult than the examination for the degree of Doctor of Philosophy that many university students who wish to teach obtain the Doctor's degree at the end of their third year (though this degree is not a prerequisite for teaching) and then pass their state examination at the end of their fourth year. A young student who has passed this state examination is called a *Studienreferendar*, and for two years he must study the theory of education and serve an apprenticeship teaching without salary in the secondary schools.

In the past this two-year period of training was not carefully organized. The young *Studienreferendaren* were therefore forced to pick up what they could from experience supplemented by any help they were able to obtain from the school principals and from the individual teachers to whom they were assigned. From 1890 to 1917 this training period was divided into a seminar year, which seems to have consisted in much observation and a little instruction from teachers and principals, and a practice year, which was spent at a

different school where the candidate taught from ten to twelve hours a week with very little supervision or assistance. I was told by several older men who had been trained in this manner that they had been taught very little of any value but had learned slowly and rather painfully from experience. This condition was changed somewhat after the ordinance of 1917 which required that the practical teaching experience should extend over both years of professional work and that the regular training in seminars should extend over both years.

Additional far-reaching reforms began in 1924 when the Rhine-land and Schleswig-Holstein provinces obtained permission from the state to set up their own standards and to experiment in the training of teachers. Immediately the educational authorities of Cologne and Altona appointed directors of *Studienreferendaren*, who were responsible for the entire training of all the candidates assigned to any schools in these two cities. This experiment proved so successful that the same kind of teacher-training centers have been established in most of the larger Prussian cities, these cities all following the practice of Cologne and Altona in appointing directors of *Studienreferendaren* who are men and women of marked ability and wide experience in secondary-school teaching. Though the duties of these directors are exacting, all continue to teach in the secondary schools for a few hours every week because this contact with actual classroom work is considered most important. Each director supervises all the *Studienreferendaren* in his city or district, meets them once a week in seminars on general educational theory, arranges for them to have seminars in the teaching of their special subjects, arranges that each student will have his practical experience in two or three different types of schools, and supervises this practice teaching. In Schleswig-Holstein and in the Province of Saxony all candidates work under the guidance of such a director during both years of training. In most of the Prussian provinces none but second-year candidates obtain this type of instruction, the first-year candidates receiving assistance only from the teachers and the principals of the schools to which they are assigned for apprentice teaching.

All the provinces agree in combining theoretical and practical work for both years of training. The theoretical work consists in seminars in methods of teaching special subjects and seminars in

general educational theory. In the former all the candidates who are preparing to teach a given subject are gathered together into a seminar conducted by some man or woman who, because of the fact that he or she teaches this subject every day in the secondary school, knows its problems intimately. The instruction in the general theory of education is sometimes given by the principal of the school and sometimes by the director of *Studienreferendaren*. For the practice teaching all provinces place the candidates during both years of their training in higher schools, where they teach eight or ten times a week under the direction of experienced teachers. In all the provinces the candidates are transferred from a school of one type to another school of very different type in order that they may learn to know the *Gymnasium*, the *Realgymnasium*, the *Oberrealschule*, and, if possible, both boys' and girls' schools in their two years of teaching. All provinces plan to give each candidate experience in teaching three different subjects and in teaching pupils of every age found in the higher schools (that is, from ten to nineteen years). All provinces conduct some type of *Lehrprobe*, a kind of student demonstration lesson.

I visited a few seminars in special subjects, a few seminars in general educational problems which were led by school principals, and many of those led by directors of *Studienreferendaren*, comparing them constantly with education classes which I have attended and which I have taught. The seminars differed from one another as widely as do seminars in the United States, ranging from those where scholarly reports were read and discussed by the majority of the class with varied and keenly discriminating criticisms to one in which a conscientious student read an interminable paper that he seemed utterly unable to condense although the director urged him twice to shorten his report in order to leave time for discussion. Though I believe that the principles of education presented in these seminars were not particularly different from those presented in education classes in the United States and that these young people had not read more widely or more thoroughly in educational theory than have our own better students, I felt that the practical experience which the young Germans were having every day rendered them more intelligently critical of these principles and made them think more intently of the actual application of the principles to

teaching. In almost every seminar that I attended, there was lively and animated discussion, in which students used examples from their own teaching to illustrate or to challenge the theories presented.

In order that I might gain a better idea of the practical side of this teacher training, I visited many classes taught by *Studienreferendaren*. Most of the teaching I saw was done with greater precision and finish than I have often seen in the work of a beginner in our country. This finish results partly, I believe, from the fact that the German candidates teach only once or twice a day and therefore have time to prepare each lesson with the greatest of care. After almost every visit the director or the supervisor who accompanied me stopped to give the young teacher criticisms, which were always constructive and helpful and which showed remarkable ability to analyze the exact cause of the misunderstanding of the pupils, to suggest the change in order or in emphasis that would most improve the lesson, or to indicate the way in which the material presented could have been more intimately related to the past experience of the pupils.

THE TEST OF TEACHING ABILITY

The climax of this practical part of the work of the *Studienreferendaren* is reached in their *Lehrprobe*, which means, literally, test of teaching ability. Once a month, or in some provinces less frequently, each *Studienreferendar* plans a lesson which is a proof of his own teaching ability and which he is prepared to teach before a large number of observers to a class which he has taught for some weeks or even months.

Because these *Lehrproben* are different from anything I have ever seen in America, I will describe one of them in detail. About twenty observers met at eight o'clock one Saturday morning at a *Realgymnasium* for girls in Cologne and watched one *Studienreferendar* teach a lesson in poetry to a class of sixteen-year old girls, whom she had been teaching regularly for three months, and another *Studienreferendar* teach a very simple poem to children of twelve, whom she had taught for many weeks. The teachers and the group of observers then withdrew to a small conference-room and spent the third period discussing the two lessons which had been taught. First, the director of the *Studienreferendaren*, who presided, invited the young woman who had taught the first class to speak about her lesson.

The discussion was then thrown open to other members of the seminar, and, though no individual student was called on to give an opinion, almost every student present took part in the discussion. I was impressed, not only by the extent to which these young people discussed the general psychological and educational principles involved rather than trivial or formal points of subject matter and technique, but also by the vividness with which their disagreements concerning methods of procedure illustrated the contention of their director that there is no one perfect method of teaching all subjects to be followed in all cases. When the student who had taught the class was given another chance to speak and to comment on any opinion which seemed to her unfair or ill advised, there arose a very practical discussion of the extent to which interest should be sacrificed for correct form, and vice versa. Next, the regular teacher of the class said something about the background and the ability of these pupils and suggested a different angle of approach which would have helped to relate this poem to something they had enjoyed the year before. After the supervisor of literature for the city of Cologne had expressed his opinion, the student who had taught the lesson was given another chance to discuss the ideas presented. At the end, when the director gave his carefully-weighed and thoughtful judgment, bringing out all the strong points of the lesson, showing the gains and losses which might be expected from following one of the other methods suggested and pointing out the educational principles involved in their choice, and finally suggesting two practical ways in which the lesson might have been improved, I felt that here was a perfect method for the training of teachers. After the second class in literature had been discussed, the entire group observed two drawing lessons and engaged in the same kind of critique for each of them. I came away feeling that the existence of these *Lehrproben* explains, in a large measure, why the Prussians have been able in less than a half-generation to change the dominant temper of their schools from the dogmatic imposition of fixed lessons which the pupils must memorize to the stimulation of independent thought and judgment on the part of the pupils.

If I had heard a great deal about these *Lehrproben* before I saw them, I should have been certain that they would make the student teacher so self-conscious and inhibited that he could not possibly

teach with enthusiasm. As a matter of fact, most of the student teachers I saw taught with decided energy and animation, as well as with surety and precision, and showed surprisingly few traces of nervousness or self-consciousness. Many of them were able to take part in the critique in a decidedly impartial and impersonal manner. Perhaps their lack of self-consciousness during the critique was partly a result of the nature of the criticisms offered. Seldom did an observer criticize a little mannerism or a mistake of pronunciation or grammar; attention was directed to such an error only as a trivial thing which could be corrected by a slight effort before it became a habit. For the most part, the discussion concerned the method of attack on the lesson, the psychological principles involved, and other methods which might have obtained more lively co-operation from the pupils or avoided some misunderstanding which appeared.

THE FINAL EXAMINATION OF THE TEACHER IN TRAINING

Since no one can understand the training of teachers in Germany without considering the final examination which determines whether the candidate is to receive his teaching certificate, I was very pleased when a director in Berlin invited me to attend the examination of two of his teachers in training. Four official examiners put in a seven-hour day in testing these two candidates. They watched each candidate conduct a lesson in physics and then a lesson in mathematics. All four were classes which the candidates had taught for some months; I was told that in Schleswig-Holstein the candidate must teach one class of pupils whom he has not seen. After an hour's recess each candidate was given a brief oral examination in the general theory of education and in the teaching of his special subjects. The chairman of the examining board then read reports from each teacher and principal under whom the two candidates had taught, reports from the director of *Studienreferendaren*, and reports from those teachers who had read the educational treatises presented as part of the examination. With all this evidence before them, the examiners finally decided to pass these two candidates with third rank. Most of the successful candidates receive third rank, and in rare cases a very promising student receives second rank. First rank seems to exist only in theory.

APPLICATION TO CONDITIONS IN THIS COUNTRY

In the whole complicated scheme for the preparation of teachers, the part I admired most and the part I covet for our beginning teachers is the opportunity to develop gradually. As I watched these young men and women who had been able to spend many hours on the preparation of one lesson because they taught only twice a day, who had plenty of time to reflect on a lesson after it had been taught and to decide where it could have been improved, I thought of our own inexperienced teachers who teach five and six and even seven times a day, who often teach three or four different subjects, and who rush from one mistake to another too swiftly to realize how any of the difficulties could be avoided. No wonder that these mistakes harden into habits, that the young teachers call these bad habits the "teachings of experience," and that after three or four years they consider themselves skilled teachers and resist any efforts of principals and supervisors to change their procedure!

At the present time it would not seem difficult to give our prospective teachers an opportunity to teach one or two hours a day before they are allowed to take positions as regular teachers, teach for a full day, and receive full salaries. The present oversupply of teachers, the desire for higher professional standards, the demand from administrators and parents that teachers receive more adequate training—all seem to point the way to a period of training which would correspond closely to the internship of doctors. Many states and many cities are considering the possibility of demanding a fifth year of professional training. The danger is that these states and cities will leave this fifth year undefined, that they will merely require a year's work beyond graduation from college. The fifth year will then almost certainly become a year of scholarly research because that is the kind of graduate work which our colleges are organized to undertake, the kind which they have given in the past, the kind which they can most easily continue to offer, and the kind which they will justify on the ground that their graduates are very ignorant and are most in need of better command of subject matter.

Even if the fifth year of training for teaching, which now seems to be near our grasp, should escape from the Scylla of ordinary academic graduate work in preparation for the Master's degree, it may fall

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Even if the fifth year of training for teaching, which now seems to be near our grasp, should escape from the Scylla of ordinary academic graduate work in preparation for the Master's degree, it may fall

into the Charybdis of theoretical work in education—a year of discussion of how teaching ought to be done without any experience in doing it, which is about as effective as teaching swimming in a correspondence school. Because many of our liberal-arts colleges and teachers' colleges are located in towns where there are very small schools, very poor schools, or schools which will not permit any student teaching, they will inevitably find it difficult to provide the proper amount of teaching experience. Even those institutions which are fortunate enough to have demonstration schools often have regulations forbidding their students to teach any classes in those demonstration schools, and consequently they must resort to quibbles and subterfuges in order to give their students a minimum of teaching experience. The cure would seem to be for the secondary school to take charge of this apprentice work, as it does in Germany. The states, the counties, and the cities could open their schools to the young teachers in training, realizing that it is inconsistent for them to object to a policy which allows an inexperienced college graduate to teach two hours a day under the constant supervision of an experienced teacher when they have for many years been paying equally inexperienced college graduates to teach six hours a day with infrequent supervision from the busy principal or perhaps from a city or county supervisor. Even if these city, state, and county schools should object to opening their doors to students gathered from all over the country to attend a given liberal-arts college or teachers' college, believing that they would not benefit by the training given, all of them could see how they would benefit directly if they trained young people of their own community who expected next year to apply for positions in their schools.

Another advantage would follow if the regular public school should undertake this apprentice training of teachers. The young candidates would then be trained by teachers of practical experience, who would be interested in actual teaching problems and could give advice applying directly to teaching situations. One of the most admirable points about the Prussian seminars and *Lehrproben* was that the advice given by the teachers in charge was exceedingly concrete and practical. In one *Lehrprobe* a young man who was teaching a history lesson about Frederick the Great suddenly became ill and had to leave the class. The regular class teacher was evidently un-

willing to continue the lesson in front of the whole seminar group and several supervisors and directors, but the history supervisor arose and taught an excellent lesson to those thirteen-year-old boys. I wondered then how many of our professors of education would have been able, on the spur of the moment, to teach a really inspiring lesson to a junior high school class. It would be a great advantage if the teachers who are telling how classes ought to be taught could demonstrate their ability to carry out their own theories in practice.

Any comparison of our high schools with German secondary schools is unfair unless it takes into consideration the fact that we are giving secondary education to more than half of our adolescent boys and girls, whereas Germany is giving secondary education to only about one-tenth of her adolescent boys and girls. No one who has visited even a few days in German secondary schools can fail to realize how exclusive they are and what a significant factor this exclusiveness is in the greater fixity and rigidity of the entire social system of Germany. The fact that our secondary schools are free to all, and that they actually care for more than half—and in some cities practically all—of our children from fourteen to nineteen years of age is fundamental to our whole social structure, and the realization of this fact should prevent us from criticizing our own system unfairly. Because we were trying to give a secondary education to every boy or girl who desired it, our schools grew so rapidly that they needed more teachers every year than could be properly fitted for their task. Gradually, however, as there have come to be many applicants who possess the minimum training demanded, the requirements have increased for normal-school, teachers'-college, liberal-arts-college, and university training. Now at last we have reached the stage where there are, in many parts of the country, two or more applicants for every position. We can therefore again raise the standard of preparation for teaching. The question is: Shall this standard be raised by adding a year of graduate work leading to a Master's degree or shall it be raised by adding a year of graduate professional training? The first procedure has the advantage of familiarity and existing organization. The second procedure is relatively new and untried but has the great advantage that it prepares teachers by giving them an opportunity to teach.

PREDICTING SUCCESS IN ALGEBRA AND GEOMETRY

J. MURRAY LEE

Burbank City Schools, Burbank, California

W. HARDIN HUGHES

Pasadena City Schools, Pasadena, California

THE PROBLEM AND THE EXPERIMENT

Numerous studies have dealt with the prediction of success in mathematics. Most of these studies have found the value of a single factor in prediction, such as an intelligence test, an aptitude test, or some other single type of measurement. There is a need, it seems, for determining the relative values of a number of these factors when used together. The findings of previous research on the topic seem to indicate that combining ratings on certain traits with aptitude-test or prognostic-test scores increases the reliability of prediction.

The purpose of the experiment reported in this article was to determine the values of the following factors for the prediction of first-semester success in algebra and geometry.

In Algebra

1. Lee Test of Algebraic Ability
2. Hughes Trait Rating Scale
3. Teachers' ratings on mathematical ability
4. Kuhlmann-Anderson Intelligence Tests
5. Terman Group Test of Mental Ability
6. Chronological age

In Geometry

1. Lee Test of Geometric Aptitude
2. Hughes Trait Rating Scale
3. Teachers' ratings on mathematical ability
4. Kuhlmann-Anderson Intelligence Tests
5. Terman Group Test of Mental Ability

Achievement at the end of the semester was measured by the Columbia Research Bureau Algebra Test and the Orleans Plane Geometry Achievement Test. Marks given by the teacher at the end of the first semester constituted another measure of achievement.

The tests used in the experiment are published standardized tests and hence require no description. The aptitude tests were given at the beginning of the semester before the pupils had studied the sub-

ject. The intelligence quotients were obtained from previous testing. The scores on the Hughes Trait Rating Scale consisted of the pooled ratings of the teachers of the previous semester on industry, accuracy, initiative, reliability, co-operation, and leadership. Each trait was rated on a nine-point scale. These ratings were then totaled to obtain a rating score for each pupil. The teachers' ratings on mathematical abilities were obtained two weeks after the pupils had started the subjects. These ratings are not entirely prognostic for the reason that they were obtained after the teachers had had two weeks of acquaintance with the pupils. Their value lies in the light which they shed on teachers' marks.

The subjects of the experiment were 338 pupils in three junior high schools, 213 in algebra and 125 in geometry.

RESULTS

Correlations were calculated between all the factors used for both algebra and geometry. All correlations are given in Table III. The correlations between the various predictive factors and success, as measured by achievement tests and marks, are given for both subjects in Table I. The results show clearly that the aptitude tests give the best single prediction of achievement measured by standardized tests, both in algebra and in geometry. It will be noted that the Kuhlmann-Anderson Intelligence Tests provide the second best prediction of achievement. This correlation is six points lower than that with the aptitude test in algebra and nine points lower in geometry.

The consistency shown by the correlations in the two subjects is rather surprising, the correlations of the aptitude tests with achievement tests in algebra and geometry being .62 and .63, respectively. Similar consistencies may be seen in the correlations of intelligence quotients and trait ratings with achievement-test scores in the two subjects.

It is rather significant to note that the best prediction of marks in either subject is the subjective judgments of teachers. In both subjects the trait ratings and the teachers' ratings of mathematical ability correlate higher with marks than do any of the predictive tests. This finding points to the conclusions that whatever it is that

leads the teacher to rate the pupil highly also accompanies a high mark for the pupil and that, as is shown later, it is doubtful whether the "whatever it is" has much to do with the pupil's ability or achievement in the subject.

The fact that the correlation between trait ratings and marks (.60 for algebra) is higher than the correlation between trait ratings and achievement (.39) shows that the trait ratings are much more important in predicting marks than they are in predicting achievement. That the aptitude test does not predict marks any better

TABLE I
CORRELATIONS OF VARIOUS PREDICTIVE FACTORS WITH ABILITY IN
ALGEBRA AND GEOMETRY AS MEASURED BY ACHIEVEMENT
TESTS AND TEACHERS' MARKS

PREDICTIVE FACTOR	ALGEBRA (197 PUPILS)		GEOMETRY (108 PUPILS)	
	Achievement Test	Teachers' Marks	Achievement Test	Teachers' Marks
Aptitude test.....	.62	.46	.63	.31
Kuhlmann-Anderson intelligence quotient.....	.56	.48	.54	.31
Teachers' ratings of mathematical ability.....	.53	.59	.34	.42
Terman intelligence quotient.....	.47	.44	.44	.26
Trait ratings.....	.39	.60	.37	.35
Chronological age.....	-.35	-.39	.....	.....

than it does is not surprising when the low correlations between marks and achievement tests are considered. The final achievement test and teachers' marks in algebra correlate to the extent of only .54. In geometry the situation is much worse, the correlation between marks and the achievement test being only .36. Since these correlations are very small compared with what might be expected, it is clear that, whatever the teachers were marking in these subjects, the basis for their marks had little to do with the pupils' actual achievements.

One of the most outstanding results of the study is the extent of the correlations between the teachers' ratings of mathematical ability and the marks. In both subjects these correlations are higher than those between marks and the final achievement test (.54 in

algebra and .36 in geometry). This fact indicates that there is a closer agreement between the guess of the teacher as to the pupils' mathematical abilities, made after having taught the pupils for two weeks, and their final marks than there is between the final achievement test and the marks. In other words, *the teachers' preconceived ideas of the pupils' abilities were more influential in determining the pupils' final marks than were the pupils' achievements in the subjects as measured by a standardized achievement test.*

EFFECT OF LOW ACHIEVEMENT ON PREDICTION

In one school the achievement was so low in comparison with the ability of the pupils that it was felt that such a condition would decrease the size of the predictive correlations. Theoretically, lower

TABLE II
EFFECT OF LOW ACHIEVEMENT ON PREDICTIVE CORRELATIONS

FACTORS CORRELATED	CORRELATIONS IN ALGEBRA	
	Two Better-Achievement Schools (166 Pupils)	Three Schools, Including Low-Achievement School (197 Pupils)
Test of algebraic ability and achievement test.....	.68	.62
Trait ratings and achievement test.....	.47	.39
Test of algebraic ability and trait ratings (an intercorrelation).....	.28	.29

predictive correlations would be expected where the pupils were not required to achieve to the full extent of their ability. Practically, it was found that low achievement operates to lower the correlations, as is indicated by Table II. The correlations between the test of algebraic ability and achievement and between the Hughes Trait Rating Scale and achievement are predictive correlations. These correlations are considerably higher for the two schools than for all three. The intercorrelation between the test of algebraic ability and the trait ratings is not appreciably changed.

The difference made by an increase in the size of the correlations is most noticeable when the multiple correlations are studied. The

multiple correlation predicting achievement from a combination of the test of algebraic ability and trait ratings in the case of the three schools is .66; for the two better-achievement schools it is raised to .74, a considerable increase. These data indicate that poor teaching, resulting in low achievement, tends to lower the predictive value of the factors considered.

PREDICTING ACHIEVEMENT FROM SEVERAL VARIABLES

It is seen that the best prediction of achievement in either algebra or geometry was obtained through the use of the respective aptitude tests. An important consideration is: What would be the result for predictive purposes if several of the factors were combined? This question can be answered by calculating the multiple correlations. The data for such calculations are given in Table III. The highest multiple correlations are obtained when tests are selected which correlate most highly with achievement and low with each other.

The multiple correlations for achievement in algebra and certain combinations of these factors are as follows: test of algebraic ability and trait ratings, .66; test of algebraic ability and Kuhlmann-Anderson intelligence quotient, .65; trait ratings and Kuhlmann-Anderson intelligence quotient, .59. It will be noted that the best predictive results are obtained through the use of the algebraic-aptitude test and trait ratings. The correlation is increased from .66 to .74 when the two better-achievement schools are used instead of all three schools.

The multiple correlations for achievement in geometry and certain combinations of factors are as follows: test of geometric aptitude and trait ratings, .67; test of geometric aptitude and Kuhlmann-Anderson intelligence quotient, .66; trait ratings and Kuhlmann-Anderson intelligence quotient, .57. Here, as in algebra, the aptitude test combined with the trait ratings give the best prediction of achievement. The use of the Kuhlmann-Anderson intelligence quotient with the aptitude test gives practically as good results. The use of more than two factors does not increase the predictions sufficiently to be of value.

DETERMINING CRITICAL SCORES

It is desirable to determine a critical score in an aptitude test. Pupils making scores lower than the critical score should be advised

not to take the subject or at least informed of their small chances for success. Critical scores have been suggested for both aptitude tests used in this study. It is suggested in the manuals that each school

TABLE III
INTERCORRELATIONS OF VARIOUS PREDICTIVE FACTORS IN
ALGEBRA AND GEOMETRY

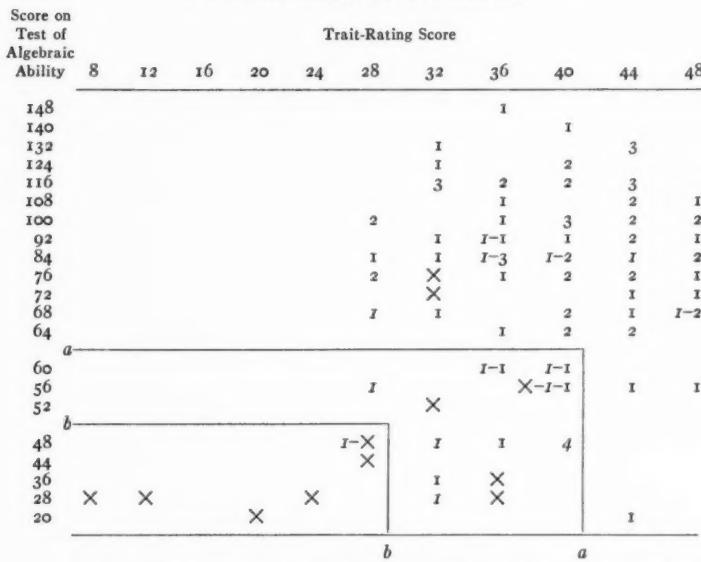
PREDICTIVE FACTOR	TEACH-ERS' MARKS	ACHIEVE-MENT SCORES	KUHL-MANN-ANDER-SON IN-TEL-LI-GENCE QUO-TIENT	TER-MAN INTEL-LIGENCE QUO-TIENT	TRAIT RAT-INGS	TEACH-ERS' RAT-INGS OF MATHE-MATI-CAL ABIL-ITY	CHRON-OLOGI-CAL AGE	APTI-TUDE TEST
Algebra								
Teachers' marks.....	.538	.481	.437	.509	.593	-.387	.459	
Achievement scores.....	.559	.472	.388	.531	-.354	.624		
Kuhlmann-Anderson intelligence quotient.....			.834	.359	.440	-.717	.690	
Termaan intelligence quotient.....				.287	.341	-.680	.564	
Trait ratings.....					.525	-.350	.286	
Teachers' ratings of mathematical ability.....						-.364	.474	
Chronological age.....							-.477	
Geometry								
Teachers' marks.....	.361	.313	.264	.352	.416	.....	.312	
Achievement scores.....	.542	.438	.306	.337	.....	.....	.629	
Kuhlmann-Anderson intelligence quotient.....			.813	.358	.542	.....	.598	
Termaan intelligence quotient.....				.217	.458	.....	.575	
Trait ratings.....					.270	.....	.236	
Teachers' ratings of mathematical ability.....						.....	.334	

should determine the critical score most appropriate for its situation, and techniques are given for this purpose. It is proposed to illustrate here how critical scores may be determined when two measures are used to predict achievement.

The first step is to make a scattergram with the scores of the apti-

tude test on the side and the scores on the trait ratings along the top. The second step is to determine which pupils have scores on the achievement test ranking them in the lowest 10 per cent of the class and which pupils have achievement scores ranking them from the lowest 11 per cent to the lowest 25 per cent. The third step is to

**A SCATTERGRAM OF SCORES MADE ON TEST OF ALGEBRAIC ABILITY AND
TRAIT RATINGS BY 130 ALGEBRA PUPILS IN TWO HIGH SCHOOLS
WITH THEIR ACHIEVEMENT INDICATED**



× indicates pupils whose scores on the achievement test rank them in the lowest 10 per cent of the class; italic figures indicate those whose scores rank them between the lowest 25 per cent and the lowest 11 per cent; and plain figures indicate those whose scores rank them in the highest 75 per cent.

locate the scores of each pupil on the scattergram. The pupils whose achievement scores rank them in the lowest 10 per cent of the class are marked on the diagram with crosses, those with scores ranking them in the level from 11 to 25 per cent are marked with italic figures, and those in the upper 75 per cent in achievement are marked in plain figures. The cross on the extreme left of the chart represents a pupil ranking in the lowest 10 per cent on the achievement test,

with a score on the aptitude test of between 28 and 35 and a trait rating of between 8 and 11. The fourth step is to determine the critical score or scores by inspection. The area marked off by line *a* includes a maximum number of pupils with low achievement and a minimum number of pupils in the upper 75 per cent of the class in achievement. The area marked off by line *b* contains no pupils in the upper 75 per cent of the class in achievement, only one pupil with achievement scores ranking him in the lowest 11 to 25 per cent of the class, and six pupils in the lowest 10 per cent. Pupils whose scores fall in area *b* should be advised against taking algebra; that is, pupils who have scores on the test of algebraic ability below 52 and trait-rating scores of less than 28 should be told that their chances for succeeding in algebra are small.

Those pupils whose scores locate them in the area between lines *a* and *b* are doubtful cases. Of the nineteen pupils in this study who were located in this area, five were in the upper 75 per cent of the class in achievement, ten were in the 11-25 per cent range, and four were in the lowest 10 per cent of the class in achievement. The five pupils with scores ranking them in the upper 75 per cent of the class in achievement had percentile achievement scores of 26, 29, 31, 38, and 48 with marks of D, B, C, C, and C, respectively. Thus, none of these pupils scored above the average of the class on the achievement test. If a pupil receives a score on the aptitude test of less than 64 and a trait rating of less than 40, he should be told that his chances for success are rather small.

IMPLICATIONS FOR GUIDANCE

There are those who oppose any attempts to restrict the "democratic right" of pupils to select their own subjects even when it is practically certain that they will fail in the subjects selected. However, if a pupil does not take one subject, he will probably take another, and he will get more good from a subject in which he is successful than from one in which he fails. No certain proof has been offered that one subject is more valuable than another for general educative purposes. Until such evidence exists, the administrator need feel no compunction about advising a pupil not to take algebra or geometry when test data proved by statistics indicate that the

pupil's chances for success, as measured by a passing mark, are nil or extremely small.

There are some who argue that correlations of the size obtained in this study are of no value for predictive purposes. These persons claim that correlations of .60 to .75 are not high enough to predict accurately the probable achievement of *every* pupil and are only slightly better than a guess. While such arguments are probably valid for a great majority of cases in a cross-section of pupils, it is equally true that the extreme scores are very significant for purposes of guidance. That correlations of the size dealt with are of value when extreme scores are considered is verified by the scattergram. The reader can see how the extremely low scores on the predictive instruments paralleled similarly low scores in mathematical achievement. While admitting that prediction is far from perfect for pupils in general, we claim that extreme scores, considered carefully, are valuable aids to intelligent guidance.

EFFECT OF READING ON SPELLING IN THE NINTH GRADE

LUTHER C. GILBERT
University of California

Investigation has shown that college students tend to improve their spelling through reading even when attention is not directed toward spelling.¹ No doubt this fact serves to account, in part at least, for the growth in spelling which takes place after the systematic study of spelling has long been discontinued. In view of the fact that significant amounts of growth in spelling vocabulary are likewise characteristic of the secondary-school years,² the investigation of the effect of reading on spelling has been extended downward.

The present report presents data for 736 pupils in Grade IX in schools in the San Francisco Bay district.³ This grade was selected for special study from several angles: First, is there an appreciable amount of gain in spelling effected through reading in the case of words which have been encountered recently in spelling situations? Second, is there an appreciable amount of gain in spelling through reading when words have been encountered more remotely in spelling situations? Third, do good spellers acquire more spelling through reading than do poor spellers? Fourth, is a slow rate of reading an essential ingredient of improvement in spelling through reading?

In preparation for the investigation a list of fifty words was selected, chiefly from the Sixteen Spelling Scales and from the Buckingham Extension of the Ayres Scale. Embedded in this list were two

¹ Luther C. Gilbert, "The Influence of Reading on the Spelling of College Students" (to appear in an early number of the *Journal of Educational Research*).

² Sixteen Spelling Scales: Standardized in Sentences for Secondary Schools. Teachers College Bulletin, Twelfth Series, No. 19. New York: Teachers College Columbia University, 1921.

³ The investigation was conducted in the Garfield (Berkeley), Hoover (Albany), Martinez (Martinez), and Willard (Berkeley) Junior High Schools, and Alameda, Burlingame, Hayward, Redwood City, and San Mateo High Schools.

sets of ten words each. These key words were selected from a longer list of difficult words previously tested with a trial group of 124 ninth-grade pupils. On the basis of these spellings the twenty words were chosen and paired according to their difficulty. The preliminary spellings indicated that the key words would be new to the spelling vocabularies of most of the ninth-grade pupils, yet within easy learning range.

SET I		SET II	
penitentiary	dissension	rhinoceros	conscientious
lieutenant	cantaloupe	moccasin	abyss
souvenir	poultice	miscellaneous	discernible
diphtheria	chauffeur	inflammable	rendezvous
sovereign	naphtha	jardinier	appendicitis

Two reading selections were then composed. Embedded in one were the words of Set I; embedded in the other were the words of Set II. The material was planned with a view to interesting high-school pupils. The two selections were similar in character and length. One contained 628 words; the other 605 words.

The fifty-word pretest had a threefold purpose: (1) It served as a basis for the classification of the pupils according to spelling ability. (2) It measured the pupils' ability to spell the key words. (3) It made the key words less conspicuous than they would have been in a shorter list and therefore less easily recognizable in the reading selection which followed. Each of the fifty words was first pronounced, then given in a sentence, and then pronounced again.

The directions gave no intimation of any connection between the spelling and the reading. Each pupil was given a mimeographed copy of the reading selection. The class was told to read the selection once, each person reading at his normal rate, with a view to answering questions on the context later. Pupils were told not to re-read but to turn the papers over immediately after one reading. When the slowest reader had finished, all papers were collected, and mimeographed sheets bearing ten true-false questions on the context were distributed. After the true-false questions had been answered, the pupils were told that they were to take another spelling test. The technique of giving the post-test was the same as that for the pretest, but at this time only the twenty key words were dictated. All the tests were given by the classroom teacher.

Two groups of pupils were used in studying spelling improvement through reading in the case of words recently encountered in spelling situations. During the same class period Group A (240 pupils) took the preliminary fifty-word test, read the selection containing the words of Set I, answered the true-false questions on the reading, and finally took the post-test on the spelling of both sets of key words. In this way it was possible to contrast the gain for words seen while reading with the gain for words not seen. As a check against possible inequality in the difficulty of the two sets of words, Group B (136 pupils) was tested in the same manner with the reading selection containing the words of Set II.

Group C (124 pupils) was used to determine what influence a lapse of time between the preliminary spelling test and the reading selection would have on learning in spelling. The spelling was given four weeks before the reading. The true-false questions on the context and the post-test in spelling followed the reading immediately.

Group D (236 pupils) took the preliminary spelling test, the reading, and the post-tests during the same period, as did Groups A and B, but for this group the reading rate was timed. Pupils were told that at the command "Mark" they were to encircle the word they were reading at the moment. The instructor gave the command at thirty-second intervals. This device is obviously a crude measure of rate, but it is sufficient to give an indication of what might be expected with a more refined technique. Except for the variations just described, the technique of administering the tests was identical for all four groups.

FINDINGS

The average number of words correctly spelled by the four groups on the full fifty-word pretest and on the selected key words is shown in Table I. Since the preliminary test was not standardized *in toto*, it is impossible to say how these groups compare with other ninth-grade pupils. Nevertheless, the data make possible intergroup and intragroup comparisons. On the whole, the four groups appear very similar in spelling ability, the greatest difference in the averages for any two groups being less than three words. Further, the greatest difference in the averages for any two corresponding ability sections is less than four words.

The two sets of key words proved to be of approximately equal

difficulty. No total group averaged more than one-third of a word higher on one set of key words than on the other. No ability fourth averaged as much as three-fourths of a word higher on one set than on

TABLE I

MEAN NUMBER OF WORDS CORRECTLY SPELLED ON PRETEST BY FOUR GROUPS
DIVIDED INTO FOURTHS ACCORDING TO SPELLING ABILITY

SECTION	NUMBER OF PUPILS	MEAN NUMBER OF WORDS		
		Pretest (50 Words)	Key Words in Set I (10 Words)	Key Words in Set II (10 Words)
Group A:				
Best fourth.....	60	30.02	3.33	3.65
Second-best fourth.....	60	20.83	1.82	1.37
Third-best fourth.....	60	13.93	.68	.48
Poorest fourth.....	60	6.52	.13	.07
Entire group.....	240	17.83	1.49	1.39
Group B:				
Best fourth.....	34	29.44	3.82	3.41
Second-best fourth.....	34	21.47	2.12	1.59
Third-best fourth.....	34	15.21	1.06	.74
Poorest fourth.....	34	7.97	.21	.18
Entire group.....	136	18.52	1.80	1.48
Group C:				
Best fourth.....	31	32.97	4.48	4.32
Second-best fourth.....	31	21.77	1.52	1.74
Third-best fourth.....	31	15.68	1.00	.97
Poorest fourth.....	31	7.81	.39	.29
Entire group.....	124	19.56	1.85	1.83
Group D:				
Best fourth.....	59	33.34	4.70	4.58
Second-best fourth.....	59	23.47	2.44	2.37
Third-best fourth.....	59	16.07	1.02	.83
Poorest fourth.....	59	9.24	.49	.39
Entire group.....	236	20.53	2.16	2.04

the other. Although absolute equality in the two sets of words was not achieved, the difference between them did not appear sufficient to warrant a change of words, especially in view of the fact that the two sets alternated in experimental and control rôles with two groups of pupils. On the whole, the key words qualified as satisfac-

tory for the purposes of the study. The scores indicate that the key words were not so difficult as to lie completely beyond the range of ninth-grade pupils. On the other hand, they were sufficiently unfamiliar to permit of large amounts of improvement under favorable learning conditions.

The mean percentages of improvement in the spelling of the key words achieved by Groups A, B, C, and D after encountering one set of the key words in reading are shown in Table II. Only total

TABLE II
MEAN PERCENTAGE OF POSSIBLE SPELLING GAIN
MADE BY FOUR GROUPS

GROUP	NUMBER OF PUPILS	WORDS ENCOUNTERED IN READING		WORDS NOT ENCOUN- TERED IN READING		DIF- FER- ENCE BE- TWEEN MEANS	PROBABLE ERROR OF MEAN DIF- FERENCE
		Mean Gain	Standard Deviation	Mean Gain	Standard Deviation		
A.....	240	16.51	22.26	0.93	11.22	15.58	1.09
B.....	136	20.65	20.91	1.98	10.82	18.67	1.36
C.....	124	5.61	19.48	1.16	15.96	4.45	1.52
D.....	236	12.79	19.80	1.28	12.90	11.51	1.02

corrections were counted in computing gain. Improvement is expressed in terms of percentage of possible gain; that is, if a pupil missed six words on the pretest and three words on the post-test, he made 50 per cent of all the gain that was possible. An interesting phenomenon is the gain accruing for words not encountered in reading. The gain is slight but appears for all four groups. In every class the same person pronounced the words of the pretest and the post-test; it would appear, then, that the gain results from hearing the words pronounced a second time or from the fact that the post-test was shorter than the pretest.

In Groups A and B the gain for words seen in the reading is markedly superior to the gain for words not seen in the reading. Since Group A encountered one set of the key words and Group B encountered the other set, the gain cannot be attributed to any inequality in difficulty. The actual differences between the mean gains for the words encountered in reading and the words not encountered

in reading are 14.3 (Group A) and 13.7 (Group B) times the respective probable errors of the mean differences. The gains must therefore be regarded as statistically significant.

It will be recalled that Groups A and B took the preliminary spelling test immediately before the reading. In Group C the spelling

TABLE III
MEAN PERCENTAGE OF POSSIBLE GAIN OF FOUR SECTIONS OF GROUPS
A, B, C, AND D DIVIDED ACCORDING TO SPELLING ABILITY
ON FIFTY-WORD PRETEST

SECTION	NUMBER OF PUPILS	WORDS ENCOUN- TERED IN READING		WORDS NOT EN- COUNTERED IN READING		DIF- FER- ENCE BE- TWEEN MEANS	PROB- ABLE ER- ROR OF MEAN DIF- FER- ENCE
		Mean Gain	Standard Devi- tion	Mean Gain	Standard Devi- tion		
Group A:							
Best fourth.....	60	31.82	23.45	3.08	16.75	28.74	2.51
Second-best fourth.....	60	17.77	26.85	.18	12.37	17.59	2.58
Third-best fourth.....	60	14.03	14.94	.32	7.33	13.71	1.54
Poorest fourth.....	60	2.42	6.95	.13	3.00	2.29	.66
Group B:							
Best fourth.....	34	35.21	23.46	2.32	15.14	32.89	3.23
Second-best fourth.....	34	25.70	19.77	.44	12.49	25.35	2.61
Third-best fourth.....	34	16.76	15.42	2.74	7.47	14.02	1.98
Poorest fourth.....	34	4.85	8.10	2.41	4.35	2.44	1.06
Group C:							
Best fourth.....	31	10.90	32.79	.32	24.72	10.58	4.98
Second-best fourth.....	31	6.61	13.93	2.06	14.73	4.55	2.46
Third-best fourth.....	31	4.51	10.39	1.71	10.72	2.80	1.81
Poorest fourth.....	31	.42	9.22	.55	8.25	— 0.13	1.50
Group D:							
Best fourth.....	59	22.02	25.75	1.07	18.97	20.95	2.81
Second-best fourth.....	59	17.64	21.28	1.58	12.21	16.06	2.15
Third-best fourth.....	59	8.39	13.64	2.37	10.27	6.02	1.50
Poorest fourth.....	59	3.12	8.54	.10	7.42	3.02	.99

test and the reading were separated by a period of four weeks. Table II shows that even after this lapse of time the gain for the words seen in the reading was more than four times the gain for the words not seen in the reading. However, the probable error of the mean difference is relatively so great that the improvement is of doubtful significance. It would appear that in Grade IX recency in attempting to spell words is a factor of prime importance in de-

termining the extent to which pupils profit by seeing the words in reading material.

In Group D, as in Groups A and B, the preliminary spelling test and the reading were given during the same period. Table II shows that in this group also the gain for words encountered in reading is significantly greater than the gain for words not encountered. However, the amount of improvement in the words encountered in reading does not equal that for Groups A and B. In all probability, the difference is largely attributable to the distraction resulting from the marking of words at thirty-second intervals.

TABLE IV

READING RATES OF FOUR SECTIONS OF GROUP D DIVIDED ACCORDING
TO SPELLING ABILITY ON FIFTY-WORD PRETEST

Section	Number of Pupils	Mean Number of Words Read a Minute	Standard Deviation
Best fourth.....	58	258.47	64.38
Second-best fourth.....	57	246.70	49.96
Third-best fourth.....	56	229.14	50.97
Poorest fourth.....	58	215.05	49.97

Table III analyzes the learning achievement in terms of spelling ability as indicated by the scores on the fifty-word pretest. For the words not encountered in reading there is no consistent correspondence between spelling ability and improvement in spelling. On the other hand, for words encountered in the course of reading the good spellers in all four groups surpass the poor spellers in the amount of gain. The table further shows that in Groups A, B, and D the learning of words seen in the reading selection is traceable largely to the three sections with the best spelling ability. The poorest sections in each group fail to profit appreciably by seeing the words.

The average reading rates of the four ability sections of Group D are shown in Table IV. In all sections there are large deviations from the average. Nevertheless, a study of the mean rates shows clearly that each section surpasses every section of lesser spelling ability in speed of reading and that the differences in rate between the best-ability section and the third- and fourth-best ability sec-

tions are of statistical significance. The pupils of greatest spelling ability, who made the greatest gain, proved likewise to read the fastest. Obviously, a slow rate of reading is not essential to pick-up in spelling through reading.

SUMMARY

The data from the study have shown that ninth-grade pupils tend to improve their spelling through reading even when attention is not directed toward spelling. Significant amounts of gain in spelling accrue when the reading involving the words in question follows immediately upon an attempt to spell the words. The amount of improvement, however, is relatively small when the attempt to spell the critical words precedes the reading by so long a period as four weeks.

Good spellers are better able to improve their spelling through reading than are poor spellers. In general, the gain does not depend on a slow rate of reading which would permit of a relatively unhurried contemplation of words. The largest amounts of learning in spelling take place with the fast readers. Since the fast readers are likewise the good spellers, it would appear that good spellers are able to add to their spelling vocabularies more efficiently than are poor spellers in spite of the possible handicap imposed by a speedier rate of reading.

SOME CHARACTERISTICS OF SECONDARY-SCHOOL PRINCIPALS

THOMAS H. BRIGGS
Teachers College, Columbia University

In the summer of 1932 I had a large class of principals or prospective principals studying means of improving instruction in secondary schools. Being interested in the types of professional and cultural activities which engaged these men and women during the school year, I distributed a blank on which several pertinent questions were asked. Three hundred and thirty-seven usable replies were received. Feeling certain that the data have general value in revealing what sorts of persons are or hope to be principals of our high schools, I am summarizing the facts here.

Of the 337, 85 per cent were men. The median age of the group was twenty-seven, half of the students being between twenty-five and thirty-six years of age. Six were fifty or over. The entire group represented thirty-six states.

The first question asked how many courses of study had been pursued during the preceding school year, when all the class were actively engaged either in administering schools or in teaching. Ninety, or 26.7 per cent, of the students had taken such courses, 30 in extension, 51 in residence (courses evidently offered by neighboring institutions), two by correspondence, and 7 of types not designated. Thirty-five students had taken one course, twenty-one had taken two, and the remaining number had taken all the way up to eight. About 83 per cent of the courses were professional, the others contributing to general education. If more than a fourth of the men and women actively engaged in education found the time voluntarily to take from one to eight courses for their professional or cultural advancement, it is a fine tribute to their ambition and zeal. The question should be raised, however, as to the amount of course work which can be taken without detracting from effectiveness in office or classroom. It would be interesting also to ascertain what

effect the decreased hope of salary increase has on the number of courses taken during a school year.

A second question concerned the professional magazines regularly read. As might be expected, some of the respondents were vague and inaccurate in making report. Entries such as the *Literary Digest*, the *National Geographic Magazine*, and "McAndrew's Magazine," and names that could not be found in standard lists were discarded when the tabulation was made. Only sixteen, or fewer than 5 per cent, of the students reported that they read regularly no professional magazines. Half of the respondents read between two and three magazines, and two reported that they regularly read as many as twelve. Following are the most popular magazines, with the number reporting that they read each: the journal of the state teachers' association, 199; *Journal of the National Education Association*, 155; *School Review*, 85; *American School Board Journal*, 50; *Junior-Senior High School Clearing House*, 42; *Mathematics Teacher*, 41; *School Executives Magazine*, 39; *Nation's Schools*, 35; *School Science and Mathematics*, 27; *English Journal*, 25; *Historical Outlook*, 24; and *School and Society*, 21.

It is surprising to find that the Bulletins of the National Department of Secondary-School Principals were reported only eight times and the *North Central Association Quarterly* only three times; and one would certainly expect the two leading journals specifically for high-school teachers and principals to be read by more than one-fourth and one-eighth, respectively, of the members of such a class. The large number of magazines reported as regularly read by from one to fourteen men and women shows a variety of interests and a dissipation of influence. On the whole, it must be concluded that professional magazines are making much less of an appeal to principals and prospective principals than they should. Whether the fault is with the school people or with the character of the magazines cannot be determined from these data.

The 337 students also reported the professional books not required by courses which they had read during the preceding academic year. Those mentioned more than five times were the following:

Ellwood P. Cubberley, *The Principal and His School*. Boston: Houghton Mifflin Co., 1923.

Ellwood P. Cubberley, *Public School Administration*. Boston: Houghton Mifflin Co., 1929 (revised).

Harl R. Douglass, *Organization and Administration of Secondary Schools*. Boston: Ginn & Co., 1932.

James B. Edmonson, Joseph Roemer, and Francis L. Bacon, *Secondary School Administration*. New York: Macmillan Co., 1931.

Herbert H. Foster, *High School Administration*. New York: Century Co., 1928.

Franklin W. Johnson, *The Administration and Supervision of the High School*. Boston: Ginn & Co., 1925.

M. Evan Morgan and Erwin C. Cline, *Systematizing the Work of School Principals*. New York: Professional & Technical Press, 1930.

C. J. Anderson, A. S. Barr, and Maybell G. Bush, *Visiting the Teacher at Work*. New York: D. Appleton & Co., 1925.

A. S. Barr and William H. Burton, *The Supervision of Instruction*. New York: D. Appleton & Co., 1926.

George C. Kyte, *How To Supervise*. Boston: Houghton Mifflin Co., 1930.

Elbert K. Fretwell, *Extra-curricular Activities in Secondary Schools*. Boston: Houghton Mifflin Co., 1931.

Harry C. McKown, *Assembly and Auditorium Activities*. New York: Macmillan Co., 1930.

Harry C. McKown, *Commencement Activities*. New York: Macmillan Co., 1931.

Harry C. McKown, *Extracurricular Activities*. New York: Macmillan Co., 1927.

Herbert Brownell and Frank B. Wade, *The Teaching of Science*. New York: Century Co., 1925.

Harl R. Douglass, *Modern Methods in High School Teaching*. Boston: Houghton Mifflin Co., 1926.

Henry C. Morrison, *The Practice of Teaching in the Secondary School*. Chicago: University of Chicago Press, 1931 (revised).

David Eugene Smith and William David Reeve, *The Teaching of Junior High School Mathematics*. Boston: Ginn & Co., 1927.

Thomas H. Briggs, *The Junior High School*. Boston: Houghton Mifflin Co., 1920.

William C. Bagley, *Education, Crime, and Social Progress*. New York: Macmillan Co., 1931.

George S. Counts, *The American Road to Culture*. New York: John Day Co., 1930.

Charles E. Germane and Edith Gayton Germane, *Character Education*. Newark, New Jersey: Silver, Burdett & Co., 1929.

William Heard Kilpatrick, *Education for a Changing Civilization*. New York: Macmillan Co., 1926.

Harold Rugg, *Culture and Education in America*. New York: Harcourt, Brace & Co., 1931.

Of these books, seven concern administration; three, supervision; four, extra-curriculum activities; four, methods of teaching; and one, organization. Five are general in nature.

Forty-five, or 13.3 per cent, of the students reported that during the year they had read no non-required professional book. Forty-nine had read one; seventy-two had read two; ninety-two, three; fifty, four; and diminishing numbers had read from five to twelve. The median number of books reported by those who had read any at all was between two and three. Whether this showing is creditable will be left to the opinion of the reader. It is notable that, of the large number of books mentioned and not reported here, the great majority concern the work which actually was being done by the respondents, and on the whole the quality of the books is well above average.

Since many criticisms have been made of the lack of cultural interests of secondary-school principals and teachers, I was especially interested in the reports made of "three most important non-professional books" read during the year. It is true that 45, or 13.3 per cent, of the respondents reported that they had read not a single such book, that 32 and 36 more could respectively recall for the record only one and two such books; yet the variety and the quality of the books mentioned are notable. Forty-five had read Adams' *The Epic of America*; twenty-seven, Buck's *The Good Earth*; sixteen, Ilin's *New Russia's Primer*; fifteen, *The Autobiography of Lincoln Steffens*; twelve, Allen's *Only Yesterday*; twelve, Beard and Beard's *The Rise of American Civilization*; and ten each of the following: Chase's *Mexico*, de Kruif's *Microbe Hunters*, and Cather's *Shadows on the Rock*. One goes down the list to the books reported by only three students before finding a single insignificant entry. The record will compare most favorably with any list of books voluntarily read by cultivated Americans. Of the ninety-six different books mentioned by two or more students, only twenty-two are fiction, and only seven may be classed as standard "classics." The others are of the types illustrated by the titles given. Those principals and prospective principals who read evidently read books of high quality; but one cannot but be disturbed by the proportion (one-third) of those aspiring to advancement as professional administrators of our secondary

schools who do not find time to read as many as three non-professional books in a year. The culturally blind will not and cannot lead to culture.

The last question on the blank concerned membership in professional organizations. Twenty-nine, or 8.6 per cent, of the students belonged to none. Two hundred and sixty-three belonged to a state educational association, 158 to the National Education Association, and 121 to district or county associations, and varying numbers to several other types of organizations. Only 7 per cent, a far smaller proportion than should be, were affiliated with the Department of Secondary-School Principals of the National Education Association. It is possible that the actual membership in all these professional organizations is larger than reported. If so, the fact that the students did not recall belonging indicates that they had joined perfunctorily and were not sufficiently conscious of benefits received to make a report when specifically asked. The greater need of professional unity today should increase the importance of teachers' associations and their responsibility for being active to protect and to promote education and those engaged in its work.

VAN DYKE'S DATA ON THE RELATION OF MENSTRUATION TO THE GROWTH OF GIRLS

FRANK K. SHUTTLEWORTH
Yale University

In an article appearing in this journal¹ Van Dyke comes to the conclusion that tall girls do not mature earlier than short ones. His data concern twenty girls whose first menstruation occurred at the age of twelve or earlier, nineteen girls who matured at the age of thirteen, sixteen girls at the age of fourteen, and five girls at the age of fifteen. His information includes the heights and the weights of these girls for a period extending from two years prior to two years after the first menstruation. A quotation will indicate the method of analysis and his results.

An effort was made to determine the influence of early or late maturing on height and weight. Baldwin says, "Tall girls of a fairly homogeneous group, as a general rule, mature earlier than short ones." If this statement were true, one would expect to find that the tall girls in this investigation matured at an earlier age than did the short girls. The cases were arranged in rank order according to height two years before puberty. The lowest and highest fourths, or the fifteen shortest and the fifteen tallest girls, were selected, and the average age at which maturity first appeared was determined. . . . For the fifteen shortest girls the average age was twelve years and six months, while for the fifteen tallest girls the average age was thirteen years and eleven months.²

This result not only contradicts Baldwin³ but is at variance with the recent findings of Leal⁴ and Boas.⁵

The explanation of Van Dyke's unusual finding lies in the selec-

¹ G. E. Van Dyke, "The Effect of the Advent of Puberty on the Growth in Height and Weight of Girls," *School Review*, XXXVIII (March, 1930), 211-21.

² *Ibid.*, pp. 217-19.

³ Bird T. Baldwin, *The Physical Growth of Children from Birth to Maturity*, p. 194. University of Iowa Studies in Child Welfare, Vol. I, No. 1. Iowa City, Iowa: University of Iowa, 1921.

⁴ Mary A. Leal, "The Relationship between Height and Physiological Maturing," *Journal of Educational Research*, XXV (March, 1932), 168-77.

⁵ F. Boas, "Studies in Growth," *Human Biology*, IV (September, 1932), 307-50.

tion of cases "according to height two years before puberty." That is, Van Dyke took the heights of twenty girls at age ten or under, of nineteen girls at age eleven, of sixteen girls at age twelve, and of five girls at age thirteen who matured at ages twelve or earlier, at thirteen, fourteen, and fifteen, respectively; ranked these sixty heights in order; selected the fifteen tallest and the fifteen shortest; and determined the average age of first menstruation for the resulting groups of tall and short girls. This procedure is clearly in error. The proper procedure is to hold the age factor constant. In Van Dyke's tables the heights of fifty-five girls at the age of twelve are available. When selection is made of the fifteen tallest and the fifteen shortest girls according to height at the age of twelve, it is found that the former matured on the average at 11.8 years of age while the latter matured at 13.6 years of age. Similarly, for fifty-nine girls selected at age thirteen, the tallest fifteen matured at 12.2 years, the shortest at 14.1 years. Similarly, for fifty-five cases at age fourteen, the tallest fifteen girls matured at 12.6 years and the shortest at 13.9 years of age. These results are in harmony with the findings of Baldwin, Leal, and Boas. All four sets of data indicate that during puberty tall girls of a given age mature earlier than short girls of the same age.

Van Dyke applies the same procedure to weight that he applies to height, coming to the false conclusion that heavier girls mature somewhat later than girls of light weight. Retabulating his data with the age factor held constant shows that the fifteen girls who were heaviest at the age of twelve matured on the average at 11.7 years of age, while the fifteen girls who were the lightest at the age of twelve matured on the average at 13.7 years. Similarly, for girls selected at the age of thirteen, the fifteen heaviest matured at the age of 12.1 years, the fifteen lightest at 14.3 years. Similarly, for girls selected at the age of fourteen, the fifteen heaviest matured at the age of 12.4 years, the fifteen lightest at 14.1 years. Again, the revised results are in harmony with other data.

It is of some interest to note that in terms of correlations these relationships are surprisingly high. Height and weight at the age of twelve correlate to the extent of $-.72$ and $-.70$, respectively, with age of first menstruation. That is, given height and weight at the

age of twelve an estimate, approaching the status of prediction, of the age of first menstruation could be made within a probable error of five or six months. Further, the height of girls at the age of ten correlates .94 with height at the age of twelve; weight at the age of ten correlates .91 with weight at the age of twelve; and height at the age of seven correlates .92 with height at the age of twelve.¹ These correlations indicate that a full-fledged prediction within a probable error of about six or seven months might be made as early as the age of ten or even the age of seven.² Such a prediction might be of some practical value in anticipating the needs of various groups of girls for instruction in the hygiene of menstruation.

From the point of view of understanding adolescent development, it should also be apparent that a study of "The Effect of the Advent of Puberty on the Growth in Height and Weight of Girls" suggests a serious misunderstanding of the interrelations of the various factors involved. Apparently, the factors which are responsible for the close relation between physical status and the first menstruation are functioning long before menstruation makes its appearance. Priesel and Wagner remark that, while the first menstruation is physiologically related, it is never an early symptom of, and must not be taken as representing the key to, pubertal development.³ Our ignorance of such matters is, of course, abysmal.

¹ These correlations were calculated from data published *in extenso* by Bird Thomas Baldwin, *Physical Growth and School Progress*, United States Bureau of Education Bulletin No. 10, 1914. The number of cases is inadequate, but the results are in harmony with other data.

² Some prediction may be made at birth on the basis of the mothers' menstrual history. See the following:

a) L. Bolk, "The Menarche in Dutch Women and Its Precipitated Appearance in the Youngest Generation," *Koninklijke Akademie van Wetenschappen te Amsterdam, Proceedings of the Section of Sciences*, Vol. XXVI (1923), Nos. 7 and 8, pp. 650-63.

b) Paul Popenoe, "Inheritance of Age of Onset of Menstruation," *Eugenical News*, XIII (July, 1928), 101.

c) H. N. Gould and M. R. Gould, "Age of First Menstruation in Mothers and Daughters," *Journal of the American Medical Association*, XCIVIII (April 10, 1932), 1349-52.

³ R. Priesel and R. Wagner, "Gesetzmässigkeiten im Auftreten der extragenitalen sekundären Geschlechtsmerkmale bei Mädchen," *Zeitschrift für Konstitutionslehre*, XV (1929-30), 333-52.

SELECTED REFERENCES ON SECONDARY-SCHOOL INSTRUCTION

III. THE SUBJECT FIELDS—CONTINUED

LEONARD V. KOOS AND COLLABORATORS

This third and final list of selected references on secondary-school instruction contains items dealing with the subject fields not represented in the list published in the February *School Review*, namely, industrial and vocational arts, agriculture, home economics, commercial subjects, music, art, and physical education. The present list, like the first and the second, follows a definition of "instruction" which includes its three main aspects of (1) curriculum, (2) methods of teaching and study and measurement, and (3) supervision.

INDUSTRIAL AND VOCATIONAL ARTS

HOMER J. SMITH
University of Minnesota

177. *Annotated List of 800 Graduate Theses and Dissertations in Industrial-Arts Education and Vocational-Industrial Education Accepted by Institutions of Higher Learning in the United States (1892-1933)*. Compiled by a Special Research Committee for the Twenty-fourth Manual Arts Conference. Ames, Iowa: William L. Hunter (Iowa State College), 1933. Pp. 89 (mimeographed).

This list was compiled for, and presented to, the Twenty-fourth Manual Arts Conference held on December 14-16, 1933, and was the work of a special committee. The references are shown in alphabetical order of authors, with a numerical subject index. Authors, titles, institutions, degrees, years, and pages are given for all theses, and brief annotations are given for perhaps one-third. Assumed to be from 65 to 85 per cent complete for the field concerned.

178. BOLLINGER, ELROY W. "Securing the Right Kind of Light," *Industrial Arts and Vocational Education*, XXII (March, 1933), 135-41.

An excellent article on the artificial-illumination problems of school shops and work places. The special terminology is explained. Includes discussion of the measurement of lighting units, reflecting surfaces, wall paints, etc. Suggestions are given concerning kinds, sizes, spacing, and levels of fixtures in relation to room uses, general types of work, and specific processes.

179. BOWMAN, CLYDE A. "Industrial Education and Change," *Industrial Arts and Vocational Education*, XXII (July and August, 1933), 223-27, 250-54.
A consideration of what industrial educators must study if they are to make proper training provision for the youth of this age and if they are to be truly professional workers. Numerous charts are provided, and an inventory is suggested in detail. The teacher, the administrator, or the teacher-trainer should evaluate his possessions, activities, techniques, and professional acceptances.

180. CUSHMAN, FRANK. "Changes in Occupations and Employment as Revealed by the United States Census," *American Vocational Association News Bulletin*, VIII (February, 1933), 23-27.
Compares classifications and distributions of all gainfully employed persons in 1910, 1920, and 1930. Disproves some popular conceptions of occupational groups and conditions. Charts much information concerning ages of workers, numbers employed, rates of transfer, and new or declining fields. Indicates the responsibility of vocational education in connection with these trends.

181. FRYKLUND, VERNE C. "Training and Changing Technology," *Industrial Arts and Vocational Education*, XXII (December, 1933), 368-71.
Discusses hand-labor displacement through mechanization and presents other factors as equally important causes of unemployment. Argues that technological advances create new work and force changes in service, conditions which in turn require extension of vocational-training programs.

182. GLOVER, IRA-RUSSELL. "Status of Practical and Manual Arts in the Various States of the United States," *School and Society*, XXXVII (February 18, 1933), 226-30.
A sketchy presentation in review of the status and trends of industrial work in the schools. Based on the reading of books, reports, course-of-study bulletins, and letters from state departments of education. Compares objectives, types of offering, and general acceptance of this work as a part of the curriculum in various states and regions.

183. MAYS, ARTHUR B. "The Practical Arts and Integration of the Curriculum," *School Review*, XLI (January, 1933), 51-55.
In view of the variety of subjects and related activities which are experienced by children in present-day education, the author urges the need for more certainty of integration. The mind of the pupil must be possessed by some motive or principle of unification and purpose. The value of the practical arts is clearly and forcefully explained. These subjects are interesting to most children, call for skill, result in a product, and permit of an easily understood co-ordination with more academic parts of the curriculum.

184. METZ, JOHN J. (Editor). "School Shop Annual, 1933 Edition," *Industrial Arts and Vocational Education*, XXII (February, 1933), 29-132.
Gives descriptions, illustrations, advertisements, and courses representative of the common school-shop fields. Special attention is paid to the physical side,

such as shop layouts, lighting, tools, machines, and supplies. Exceedingly valuable to those planning new departments or changes and to those concerned with annual or occasional requisitions.

185. SMITH, HOMER J. "Industrial Arts Objectives and Their Attainment," *Proceedings of the Seventeenth Annual Meeting of the Department of Secondary-School Principals*, pp. 223-32. Bulletin of the Department of Secondary-School Principals, No. 45. Berwyn, Illinois: Department of Secondary-School Principals of the National Education Association (H. V. Church, Executive Secretary), 1933.
Gives a list of six objectives and suggests how these may be attained. Discusses offering, class management, and course materials in relation to aims. Stresses the "general-education" concept and urges that information be given more attention and that less time be spent in manipulation.

186. VAN WESTRIENEN, HAROLD J. "Handling Large Classes," *Industrial Arts and Vocational Education*, XXII (August and September, 1933), 245-49, 282-84.
The author believes that large classes in industrial subjects are inevitable, and he offers to teachers many helpful suggestions on how their own adjustments can be made. Gives discussions of economic, social, and educational aspects of the problem; conditions favorable to learning in large classes; and management schemes. A very practical article presented under good organization.

187. VOTH, JOHN J., and HUNTER, WILLIAM L. (Compilers). *Objectives of Industrial Arts Education*. Ames, Iowa: Industrial Arts Department, Iowa State College, 1933. Pp. 75 (mimeographed).
A compilation of verbatim statements by 138 authors on general objectives, aims in elementary schools and in junior and senior high schools, and purposes of 14 specific industrial subjects. A total of 199 statements selected from the literature since 1920. The quotations are drawn from books, bulletins, periodicals, and published courses.

188. WAGNER, R. W. "Equipment and Teaching Devices of a General Metal-Shop in a Junior High School," *Industrial Education Magazine*, XXXIV (April, 1933), 169-72.
An excellent exposition of what can be done in general metal-work under limitations of money and space. Nineteen illustrations of floor plans, location of equipment, types of physical accessories, and sample projects are given. Includes discussion of objectives and of instructional methods and devices.

189. WARNER, WILLIAM E. (Editor). *The Epsilon Pi Tau Review* (Standardization Number), IV (1933). Pp. 118. Columbus, Ohio: William E. Warner, National Secretary (64 West Woodruff Avenue).
This annual includes briefs of addresses concerning industrial arts made at recent meetings of the American Vocational Association, the Western Arts Association, and certain fraternity chapters. Of particular interest also is a symposium on standardization—in nature, in business and industry, in industrial

arts and vocational education, by the United States Bureau of Standards, by the American Standards Association, and in school-shop and drawing-room practice.

AGRICULTURE

SHERMAN DICKINSON
University of Missouri

190. BRADFORD, HARRY E. "Some Changing Tendencies in Adult Education in Agriculture," *Agricultural Education*, V (April, 1933), 149-51.
Sets up and discusses specifically four major problems in the field of rural adult education.
191. BYRAM, H. M. "Teaching General Agriculture," *Agricultural Education*, VI (November, 1933), 69, 71.
Calls attention to the extent of the field, the shortage of properly trained teachers, and the objectives of a course in general agriculture.
192. DICKINSON, SHERMAN. "Supervising Practice in Vocational Agriculture," *Agricultural Education*, V (January, 1933), 106-7.
Presents a brief discussion of the teachers' responsibility in supervision of practice, including suggestions on importance, aim, attitude, procedures, and records.
193. DICKINSON, SHERMAN. "Principles Which Should Control a Program in Vocational Agriculture in Any School," *Agricultural Education*, VI (September, 1933), 37, 48.
Sixteen principles are presented with brief explanatory statements.
194. FITZGERALD, N. E. "Educational Objectives and Vocational Agriculture," *Agricultural Education*, V (June, 1933), 188-89.
An evaluation of vocational agriculture in terms of the cardinal principles of education set forth in United States Bureau of Education Bulletin Number 35, 1918.
195. FITZGERALD, N. E., and STIVERS, E. D. "Summary of Studies in Evening School Instruction," *Agricultural Education*, VI (August, 1933), 24-29, 32.
A complete compilation of research studies in this field, with extended annotations on each study under the headings of "Method" and "Findings."
196. GIBSON, H. H. "Securing and Organizing Farm Jobs for Instruction in Farm Mechanics," *Agricultural Education*, V (January, 1933), 108-9.
A stimulating and practical discussion of an almost universal difficulty in agricultural shopwork.
197. GRIMES, W. E. "Probable Future Trends in Income and Their Effect on Rural Life," *Agricultural Education*, V (March, 1933), 134-36.
Compares the present economic situation with depressions of the past and discusses debts and price levels and the implications of these factors for the teacher of agriculture.

198. HAMLIN, H. M. "Summary of Measurement Studies in Agricultural Education," *Agricultural Education*, VI (November, 1933), 74-77, 80.
Summarizes seventy-five studies in this field, classified as surveys, studies of graduates, measurement of outcomes with organized groups, and miscellaneous studies. Includes a discussion of measurement technique and the present status of measurement.

199. LANE, C. H. "Review of Problems in Vocational Education in Agriculture," *Agricultural Education*, V (March, 1933), 139-40.
Brief but pointed discussion of teacher selection and training, Future Farmers organization, evening-school supervised practice, content for part-time courses, and supervised practice.

200. LATHROP, F. W. "Summary of Studies in Part-Time Instruction," *Agricultural Education*, V (November, 1932), 74-76.
Lists the studies available in this field, analyzes such studies in general, and points out specific needs for further studies.

201. MAGILL, EDMUND C. "Planning Supervised Farm Practice," *Agricultural Education*, VI (October, 1933), 57-58.
Specific suggestions on purposes, standards, and procedures in project-planning.

202. MORGAN, BARTON. "Responsibility for Training for Agricultural Leadership," *Agricultural Education*, V (June, 1933), 183, 192.
Points out need for rural leadership and the place of the rural school in supplying it.

203. OLNEY, ROY A. "Filing Bulletins and Charts," *Agricultural Education*, VI (October, 1933), 54-56.
An illustrated article describing in detail a filing system for vocational-agriculture departments.

204. STARRAK, J. A. "Problem Procedures in Teaching Vocational Agriculture," *Agricultural Education*, V (December, 1932), 87-89, 96.
Offers a definition of the "problem" in teaching and suggests techniques for problem selection, organization, and teaching, together with a discussion of problem types.

205. STARRAK, J. A. "The Problem Procedure in Teaching Agriculture," *Agricultural Education*, V (June, 1933), 186-87; VI (July, August, and September, 1933), 10-11, 22-23, 42-43.
A series presenting a definite procedure illustrative of the problem method. The titles of the separate articles are as follows: "Determining the Objectives To Be Achieved," "The Formulation and Arrangement of Problems," "Presenting the Problem to the Class for Study," "Bringing the Problem to a Satisfactory Conclusion."

206. STEWART, W. F. "Some Specific Things I Will Do To Help My Pupils Think Well," *Agricultural Education*, VI (October, 1933), 51-53, 56.
A detailed and illustrated discussion of the problems concerned with training pupils in the techniques of thinking.

HOME ECONOMICS¹CLARA M. BROWN
University of Minnesota

207. BEEMAN, MARY. "Efficient Management of the Large Class," *Practical Home Economics*, XI (July, 1933), 202.
Describes how individualized instruction in a course on "Problems in Home Living" was carried on in a class of thirty-five pupils, who ranged in age from ten to fifteen years. Suggests ways of socializing work and of managing to do worth-while teaching with the handicap of limited equipment.

208. BRECK, MARION F. (Chairman). *Home Economics*. Dover, Delaware: State Department of Public Instruction, 1932. Pp. 90.
A suggestive outline for Grades VII-X. Unique features include statements of pertinent findings of a state-wide survey interpreted in terms of the curriculum and the classification of the content of each unit into goals, activities, and illustrative material.

209. BUMGARDNER, HELEN. "The Problems of the High School Girl," *Journal of Home Economics*, XXV (June-July, 1933), 473-75.
Analyzes the effect of the present emergency on the attitudes of adolescent girls and suggests means by which home-economics instruction can help them to make the necessary emotional adjustments, as well as to meet more satisfactorily the problems of obtaining adequate food and clothing.

210. COZART, MRS. THOMAS. "What Home Economics Has Contributed to the Development of the American Girl and Boy," *Journal of Home Economics*, XXIV (December, 1932), 1053-59.
Describes changes in objectives and content of courses in home economics during the past fifteen years and cites illustrations of effectiveness of the new curriculum in Georgia schools. Should reassure those who still doubt whether one should try to teach more than cooking and sewing.

211. GEIGER, VINCENT. "New Opportunities in Home Economics—As a Principal Sees It," *Practical Home Economics*, XI (July, 1933), 203-4.
Suggests the need for a course in home-living as an essential part of secondary education for both sexes. Contends that such a course can make a vital contribution to health and to economic and social adjustments.

212. GOODYKOONTZ, BESS. "Why Teach Home Economics?" *School Life*, XVIII (May, 1933), 164.
Expresses the point of view of a person interested in general education with regard to the value that home economics can have in influencing the lives of children.

213. GRABLE, KATHARINE LEE. "Teaching Color Appreciation," *Practical Home Economics*, XI (September, 1933), 255, 275.

¹ See also Items 499, 500, 501, and 502 in the list of selected references appearing in the November, 1933, number of the *Elementary School Journal*.

Explains technique for demonstration illustrating formation of the different values and hues through the use of liquid dyes.

214. HARAP, HENRY. "Home Economics in a Changing Economic Order," *Journal of Home Economics*, XXV (June-July, 1933), 451-56.
Emphasizes the responsibility of home-economics teachers for helping their pupils (1) to understand consumer problems, (2) to recognize the necessity for evaluating advertised products in terms of their worth in satisfying real needs, and (3) to develop enjoyable home activities as a means of fortifying themselves against the emptiness of unoccupied hours which enforced leisure is bringing to large numbers of people.

215. HATCHER, HAZEL. "The Far Reaching Effects of a Summer Home Project," *Practical Home Economics*, X (October, 1932), 317, 334.
Tells how a Missouri high-school girl's efforts transformed a dilapidated house and weed-ritten yard into an attractive and livable home, which in turn inspired an entire community to begin a home-improvement project.

216. *The Home Project in Homemaking Education*. Bulletin No. 170, Home Economics Series No. 16. Washington: Federal Board for Vocational Education, 1933. Pp. xii+180.
Discusses the philosophy underlying the program of home-making instruction and shows the importance of home-project work in attaining professed objectives. Contains a wealth of concrete suggestions highly valuable to every home-economics teacher who is attempting to relate classroom instruction to home problems.

217. MCARTHUR, LAURA J. "A Study of the House and Family Situations of High-School Girls," *Abstracts of Unpublished Masters' Theses in the Field of Secondary-School Administration*, pp. 24-26. Bulletin of the Department of Secondary-School Principals of the National Education Association, No. 47. Berwyn, Illinois: Department of Secondary-School Principals of the National Education Association (H. V. Church, Executive Secretary), 1933.
Data obtained from 731 ninth-grade girls in 1930-31 portray significant characteristics of their homes; common home practices; and the home responsibilities, interests, and habits of these girls. The fact that questionnaires were returned by almost 100 per cent of the pupils to whom they were given suggests that the generalizations made are worth serious consideration by those interested in developing curriculums which will meet the needs of secondary-school pupils.

218. ROBERTS, LYDIA J. "Nutrition Needs of the School Child and the Responsibility of the Home Economics Teacher," *Journal of Home Economics*, XXIV (November, 1932), 961-66.
Sets up practical standards for judging the nutritional status of children and emphasizes the responsibility of the home-economics teacher for identifying herself with the social, economic, and health problems of the community.

219. ROBINETTE, GLADYS E. "A Child Development Unit," *Practical Home Economics*, XI (September, 1933), 253-54, 278.

A clear-cut explanation of values derived from a course in child development offered in a Pasadena high school. Describes opportunity afforded for pupil contacts with preschool children, for development of parent co-operation, for long-time studies of children, and for utilization of other agencies in the city that aid pupils in making social and emotional adjustments.

220. SWEENEY, MARY E. "Responsibility of Home Economics Teachers in Their Communities in the Present Economic Crisis," *Journal of Home Economics*, XXIV (October, 1932), 880-84.

Points out the opportunity facing home-economics teachers today to help pupils and their families adjust to lowered incomes without impairment of physical health or breakdown of family morale.

221. WILKINS, NEDRA E., and OTHERS. "Telling the Community about Home Economics," *Journal of Home Economics*, XXV (August-September, 1933), 577-82.

A symposium by six writers describing six projects which have been carried on in public schools and indicating the varied contributions that home economics is making today.

COMMERCIAL SUBJECTS

FREDERICK J. WEERSING

University of Southern California

222. ATKINSON, EARL W., and SPANABEL, ELMER E. *Workbook—Principles and Problems in Business Education*. Cincinnati, Ohio: Southwestern Publishing Co., 1933. Pp. 232.

A comprehensive outline giving references, test sheets, and exercises for a course in business education for prospective teachers in this field, with accompanying manual for instructors.

223. BARNHART, EARL W. "A Preliminary Statement of the General Objectives and Fundamental Principles of Commercial Education," *National Business Education Quarterly*, I (May, 1933), 1-9.

Based on a summary of a symposium on this subject appearing in the March, 1933, issue of this publication.

224. BARNHART, EARL W. "The Procedures for Determining the Objectives of Commercial Education," *National Business Education Quarterly*, II (October, 1933), 8-11.

Offers practical suggestions for the definition of objectives by the teachers of a department or of an entire school system.

225. BLACKSTONE, E. G. *Research Studies in Commercial Education*, V. University of Iowa Studies in Education, Vol. VIII, No. 3. Iowa City, Iowa: University of Iowa, 1932. Pp. 38.

Reports of twenty-two research studies presented at the Commercial Education Research Conferences held at the University of Iowa in the years 1930 and 1931.

226. BLACKSTONE, E. G. "Research in Commercial Education," *Business Education World*, XIV (September and October, 1933), 39-43, 91-92.
Abstracts of recent research studies of a number of important phases of commercial education.

227. BULLOCK, ALBERT E. "What Principles of Business Should Everyone Know?" *Journal of Business Education*, VIII (April, 1933), 11-12.
Preliminary results of a "General Business Information Test" designed to discover the scope of ordinary business information possessed by high-school pupils of various types.

228. CALIFORNIA STATE DEPARTMENT OF EDUCATION. *Aims and Desired Outcomes of Typewriting Instruction in California Secondary Schools*. Department of Education Bulletin, No. 8. Sacramento, California: State Department of Education, 1933. Pp. vi+10.
A series of practical standards and goals based on an extensive study of present aims and accomplishments.

229. GRAHAM, JESSIE. "Present-Day Business Requirements," *Journal of Business Education*, IX (September, 1933), 13-14; (October, 1933), 23-24.
A survey of business positions and qualifications desired by employers in San Jose, California, undertaken as a class project by a teacher-training class in a state teachers' college.

230. GRAHAM, JESSIE. "Trends in High School Business Curricula," *Balance Sheet*, XV (October, 1933), 60-62.
An analysis of business curriculums from 1889 to the present time, showing the trend toward requirement of both more social-business and more technical-business subjects.

231. HAYNES, BENJAMIN R., and GRAHAM, JESSIE. *Problems in Business Education*. Los Angeles, California: C. C. Crawford (University of Southern California), 1933. Pp. 128.
This book lists, under nineteen classifications, one thousand and one suggested problems for the investigation of business education.

232. LYON, LEVERETT S. "Social Objectives of Business Education," *Journal of Business Education*, VIII (April, 1933), 9-10.
A proposal outlining the importance of non-vocational objectives in business education.

233. NICHOLS, FREDERICK G. *Commercial Education in the High School*. New York: D. Appleton-Century Co., Inc., 1933. Pp. xxii+514.
A comprehensive treatment of (1) the need, purpose, and place of business education as a part of public education; (2) criticisms of current business curricu-

lums; (3) objectives of business education in secondary schools; (4) types of training appropriate at various educational levels; (5) technical, academic, and social-business subjects as the core of the program; and (6) business education in special types of secondary schools.

234. ROSENBLUM, IRVING. "Visual Aids in Business Education," *Journal of Business Education*, VIII (January, 1933), 17-18, 31; (February, 1933), 23-24; (March, 1933), 17-18.
An extensive list of visual aids, particularly films and slides, available for business education, with a directory of the producers and distributors.

235. SHIELDS, HARALD G. "Major Issues in the New Business Education," *Balance Sheet*, XIV (April, 1933), 340-42.
Indicates some of the more important problems involved in organizing a general type of business education.

236. *Teaching Devices and Classroom Equipment*. Sixth Yearbook of the Eastern Commercial Teachers' Association. Philadelphia: Eastern Commercial Teachers' Association (1200 Walnut Street), 1933. Pp. 422.
A wealth of practical helps to teachers of the business subjects.

237. TONNE, HERBERT A. "Trends in Business Occupations," *Journal of Business Education*, IX (October, 1933), 18-20.
The relation of office and sales occupations to what the schools are doing to prepare pupils for business life.

MUSIC

ANNE E. PIERCE
University of Iowa

238. LEE, VERNON. *Music and Its Lovers*. New York: E. P. Dutton & Co., Inc., 1933. Pp. 590.
A study of the different emotional and imaginative responses to the same musical composition by various individuals. The book is based on replies to a questionnaire of searching nature sent to a variety of persons. The author describes various reactions to music and gives an analysis or account of why the reactions are diverse.

239. MCKENZIE, DUNCAN. "Concerning Descant and Faux Bourdon," *Music Supervisors Journal*, XIX (May, 1933), 24-26.
An article which gives the meaning and the history of the terms. Helpful suggestions for the effective singing of music of this type are supplied.

240. ORTMANN, OTTO. "Some Tonal Determinants of Melodic Memory," *Journal of Educational Psychology*, XXIV (September, 1933), 454-67.
An account of an experiment to learn what causes difficulties in melodic memory commonly found in classroom situations. Methods of procedure, tonal patterns used in the test, analysis of problems, together with conclusions and suggestions for training, are given.

241. PIERCE, ANNE E., and HILPERT, ROBERT S. *Instruction in Music and Art*. National Survey of Secondary Education Monograph No. 25. United States Office of Education Bulletin No. 17, 1932. Pp. viii+68.
Part I treats of music. It includes a discussion of the development of this subject in public high schools, an analysis of recently revised courses of study, and a description of music-teaching in thirty school systems as observed in the classrooms.

242. ROSECRANCE, FRANCIS C. "What Fundamentals Shall We Measure?" *Music Supervisors Journal*, XX (December, 1933), 13-15.
The author states his reasons for believing that the fundamentals of music for the average pupil should be an appreciation or enjoyment of music and not a technical knowledge of notation.

243. TREMAINE, C. M. "Safeguard Music in the School Curriculum," *Journal of the National Education Association*, XXII (December, 1933), 249-50.
The writer points out how music is playing an important part in solving the problem of leisure. Some information about music courses and organizations in the public schools is given.

244. TREMAINE, C. M., and OTHERS. *Report of the Committee on Class Instruction in Applied Music of the Music Teachers National Association* (Reprint from the *Music Teachers National Association Volume of Proceedings for 1932*). New York: National Bureau for the Advancement of Music (45 West Forty-fifth Street), 1933.
A brief but satisfactory statement of the aims and development of class instruction in applied vocal and instrumental music in the public schools.

245. WILCOX, E. H. "A Cappella—A Definition with Observations," *Music Supervisors Journal*, XIX (March, 1933), 28-29, 32.
Observations include a brief history of *a cappella* music and a list of examples of available and appropriate compositions for use with choruses.

246. WILSON, M. EMETT. "The Sources of Appreciation—A Questionnaire," *School Music*, XXXIII (March-April, 1933), 5-6, 20.
The findings of a questionnaire sent to subscribers of a series of symphony concerts to discover how appreciation of music may best be stimulated.

ART¹

W. G. WHITFORD

247. ANDERSON, A. MARIE. *Syllabus of Design and Color*. Milwaukee, Wisconsin: Bruce Publishing Co., 1933. Pp. viii+108.
A guide for pupils and teachers in secondary schools and colleges in emphasizing the relation of principles of design and color to practical use in home decoration and costume design.

¹ See also Item 475 in the list of selected references appearing in the November, 1933, number of the *Elementary School Journal*.

248. DOBSON, MARGARET. *Art Appreciation*. New York: Isaac Pitman & Sons, 1932. Pp. xx+186.
A well-written and enlightening book on the arts. Presents fundamentals which can be discovered in all the arts. Profusely illustrated.

249. HOLMAN, LUELLA S., and BOONE, CORA (Editors and Compilers). *Course of Study in Art for Secondary Schools*. Superintendent's Bulletin, Course of Study Series, No. 131. Oakland, California: Board of Education, 1933. Pp. xiv+60.
Outlines a program in art education for secondary schools in keeping with the progress of society and the advanced thought and practice in education.

250. HOLMES, SIR CHARLES JOHN. *A Grammar of the Arts*. New York: Macmillan Co., 1932. Pp. xlvi+242.
A book for the layman and student interpreting the various aspects of beauty in art, whether in a great painting, a porcelain jug, a carpet, a cathedral, a Japanese print, a classic sculpture, or a silver cup. The guiding principles of all the arts form the background of the book.

251. KEPPEL, FREDERICK P., and DUFFUS, R. L. *The Arts in American Life*. New York: McGraw-Hill Book Co., Inc., 1933. Pp. xii+228.
One of the series of the Recent Social Trends Monographs presenting reports of President Hoover's Research Committee on Social Trends. Presents a survey of the contribution of the arts to social trends in the United States. Covers historical background, economic setting, art education in and out of the schools, architecture, painting, sculpture, advertising, art in daily life, music, dancing, theater and cinema, and the government's relation to art.

252. KNAUBER, ALMA JORDAN. *The Knauber Art Vocabulary Test and The Knauber Art Ability Test*. Cincinnati, Ohio: Alma Jordan Knauber (University of Cincinnati), 1932.
The art-vocabulary test includes one hundred questions designed to measure the extent of the pupil's art vocabulary. The art-ability test attempts to measure talent in drawing, design, and composition work. Creative ability and originality are factors of this test.

253. LAMPREY, L. *All the Ways of Building*. New York: Macmillan Co., 1933. Pp. xiv+304.
A unique book which will be of value in aiding art teachers in organizing the vast field of the building arts into the curriculum material. Presents a simple and practical approach to the study of architecture.

254. MOORE, BERNICE STARR. *People and Art*. Boston: Allyn & Bacon, 1932. Pp. xiv+316.
A general book on art appreciation in relation to life-needs. Treats the following major themes: a beautiful body, beautiful clothing for the body, a beautiful environment, a beautiful home, and beautiful things for the home.

255. PIERCE, ANNE E., and HILPERT, ROBERT S. *Instruction in Music and Art*. National Survey of Secondary Education Monograph No. 25. United States Office of Education Bulletin No. 17, 1932. Pp. viii+68. Part II, written by Hilpert, presents an analytical description of art in secondary schools in which courses in the field have recently been revised.

256. RUSSELL, MABLE, and WILSON, ELSIE PEARL. *Art Training through Home Problems*. Peoria, Illinois: Manual Arts Press, 1933. Pp. 214. Presents a progressive theory of teaching art based on the social objective. The unit approach to art instruction is introduced, together with complete course outlines and suggestions for handling the material in the classroom. The book constitutes a practical guide for teachers and students who wish to incorporate sound educational procedures into the art program.

257. THURSTON, CARL (Editor). *Enjoy Your Museum*. Pasadena, California: Esto Publishing Co., 1933. A series of small, paper-covered pamphlets which makes a distinct contribution to the literature of art education. Each pamphlet covers a significant phase of art and is presented in a simple and easily assimilated form by an authority in the field. The pamphlets are priced at ten cents each and present the following subjects: I, "Painting"; I-A, "Watercolors"; II-A, "Etching"; III, "Pottery and Porcelain"; III-A, "Hopi Pottery"; IV-A, "Najavo Rugs." Pamphlets on other subjects are in preparation.

PHYSICAL EDUCATION

L. B. SHARP

258. BRAMMELL, P. ROY. *Health Work and Physical Education*. National Survey of Secondary Education Monograph No. 28. United States Office of Education Bulletin No. 17, 1932. Pp. vi+98. An analytical description of the programs of health work and physical education in 460 secondary schools reported to be doing the unusual in this field. Among topics treated are organization and administration in individual schools, health instruction, kinds of health service, hindrances and aids to health work, and objectives of physical education.

259. BRAMMELL, P. ROY. *Intramural and Interscholastic Athletics*. National Survey of Secondary Education Monograph No. 27. United States Office of Education Bulletin No. 17, 1932. Pp. vi+144. Reports an analysis of practices in intramural and interscholastic athletics in 327 secondary schools cited as doing the outstanding in this field of activity. Deals with administration, finance, coaches, interschool relationships, and the like.

260. BURNETT, JOSEPH H. and O'BRIEN, FRED J. A. "Survey of Football Injuries in the High Schools of Massachusetts," *Research Quarterly of the American Physical Education Association*, IV (October, 1933), 91-98.

Reports the results of a study of football injuries and gives recommendations which are intended to reduce the number of such injuries in high-school athletics.

261. DRIFTMIER, ERNA. "Individual Differences in Interests and Physical Traits as Related to High School Girls in Physical Education," *Research Quarterly of the American Physical Education Association*, IV (March, 1933), 198-220.
Presents some significant findings and conclusions concerning differences in the interests and physical traits of individual high-school pupils.

262. LAPP, V. W. "Pupil Objectives in High School Physical Education," *Research Quarterly of the American Physical Education Association*, IV (May, 1933), 157-67.
Discusses the attitudes of pupils toward physical-education activities, pointing out especially the differences between the attitudes of boys and girls.

263. *The New Leisure Challenges the Schools*. Based on a Study Made for the National Recreation Association by Eugene T. Lies. Washington: National Education Association, 1933. Pp. 326.
A study of more than six thousand public secondary schools showing what these schools are doing in the program of training for leisure. This report is a comprehensive and practical guide for schools attempting to meet the demands of the new leisure.

264. ROGERS, FREDERICK RAND. "Fundamental Policies and Measures in Required Physical Education," *Research Quarterly of the American Physical Education Association*, IV (March, 1933), 118-25.
Presents and discusses two basic policies of required physical education.

265. ROWE, FLOYD A. "Growth Comparison of Athletes and Non-Athletes," *Research Quarterly of the American Physical Education Association*, IV (October, 1933), 108-16.
A study of two groups of boys showed that the non-athletic group increased more in height and weight than the athletic group.

Educational Writings

REVIEWS AND BOOK NOTES

Readjustments in higher education.—Administrative officers and the staffs of higher institutions of learning are confronted with many problems at this time, some of which have suddenly obtruded themselves and have as suddenly required answers. On the other hand, certain of the problems are not so novel as they may appear but are, rather, old problems pressing for solution. Since many of these problems have common antecedents, it is of value for one institution to know what others may be doing in attacking them, even if no other basis than that of expediency can be given for a hasty solution. For this reason, a recent publication¹ may be considered a timely contribution to the field of higher education.

The eighteen papers constituting the publication center more or less in a discussion of needed readjustments in higher education. There are six subdivisions.

Part I presents three papers dealing with the nature of the present emergency. President Robert M. Hutchins treats of the ethical and the spiritual phases of the emergency. He points out the need of escape from the dangers of a commercial point of view toward education, the need of a proper fiscal policy based on the distinctive purposes of institutions, and the need of a constructive leadership directed toward a program for a complete system of education. President Lotus D. Coffman discusses the influence of the depression in promoting critical self-appraisal of educational institutions but points out that studies of the forces in operation were under way long before the present emergency. Charles E. Merriam directs attention to the need for a new orientation in civic training based on a recognition of the rapid social and political changes rather than on past traditions.

Part II consists of three papers dealing with readjustments affecting instruction. President Lotus D. Coffman discusses certain fundamental movements directed toward improvement of instruction and describes in some detail the purposes and the plans in operation at the General College of the University of Minnesota. Arthur J. Klein relates the activities of a faculty committee of three in the attempt to modify curricular offerings and methods of instruction at Ohio State University. President Homer P. Rainey describes the new program in

¹ *Needed Readjustments in Higher Education.* Proceedings of the Institute for Administrative Officers of Higher Institutions, Vol. V. Edited by William S. Gray. Chicago: University of Chicago Press, 1933. Pp. viii+284. \$2.00.

operation at Bucknell University, in which emphasis is placed on the social significance of a liberal college when functioning creatively.

Three papers dealing with readjustments affecting the organization of higher education are presented in Part III. Charles H. Judd emphasizes the need for a clear distinction between secondary and higher education. He proposes a new program for secondary education and regards the ability to do independent intellectual work as a prerequisite to entrance to college or university. George A. Works discusses the need for greater co-operation and co-ordination among institutions in order that higher education may be adjusted to the needs of states and to their resources. George F. Zook treats of the bearing of the standards prescribed by accrediting agencies on economies in education.

The discussions grouped under Part IV are concerned with readjustments that are affecting student life. The first, by Aaron J. Brumbaugh, treats of the development of student-personnel work in accordance with the general readjustments in education. The second, by Robert C. Woellner, describes the means now being employed by institutions in assisting financially dependent students. In the third T. Nelson Metcalf discusses athletic programs in keeping with the objectives of general education.

Three papers dealing with such fiscal aspects as sources of revenue and unit costs comprise Part V. John D. Russell and Floyd W. Reeves discuss practices in the management of endowment funds and the principles of effective management. Simeon E. Leland discusses certain issues in the financial support of higher education. John D. Russell presents data showing the trends in student fees at public and private institutions and points out certain implications of various points of view on the aims of higher education.

Part VI concludes the volume by describing financial readjustments in three types of institutions. President R. M. Hughes outlines the means of adjustment to a reduced budget at Iowa State College of Agriculture and Mechanic Arts, a land-grant institution. President Homer P. Rainey presents various means of adjustment to diminished revenues now under way at liberal-arts colleges. Harvey C. Daines treats of the financial policies at endowed institutions, including certain readjustments in progress.

The comprehensive treatment of current attempts at adjustments to rapidly changing conditions renders this volume of special interest and value to several groups of people, among whom may be mentioned administrators responsible for developing programs and determining policies, faculty members participating directly or indirectly in the formulation of programs and policies, and research workers who are attentive to problems that are pressing for solution.

PALMER O. JOHNSON

UNIVERSITY OF MINNESOTA

Instruction by correspondence.—Most civilized countries recognize the importance of providing opportunities for the continuation of education of adult persons. Forms and means of such education, however, vary greatly from coun-

try to country. France has its *cours d'adultes*; Germany, its *Volkshochschule*; England, its extra-mural lecture courses, tutorial classes, and technical evening classes; the Nordic countries, their peoples' high schools and universities. All these represent more-or-less sporadic establishments of isolated classes, institutes, study circles, discussion groups, and lectures. They usually stand apart and have no connection with the official systems of higher education. Most of these provisions are based on the personal contact of teacher and student and are in influence naturally confined to the residential district of both. Country-wide undertakings in correspondence teaching are rare. Thus, in Germany there is only one *Fernschule* at Jena, which, under the auspices of the state, undertakes correspondence teaching in a limited number of subjects. America, more than any other country, has accepted and practiced the idea of rendering opportunities for further education through university extension in the form of correspondence instruction. The phenomenal growth of correspondence instruction and the variety of services which modern American universities are offering by mail to thousands of men and women at work or at leisure in their home communities is well portrayed in the book under review.¹

The volume presents a condensed report of a survey of correspondence instruction undertaken for the American Association for Adult Education at the suggestion of its director, Morse A. Cartwright. The general supervision of the survey lay in the hands of Mallory, and Bittner had charge of the collection and the organization of data. For the expense of the undertaking and the printing of the report, the Carnegie Corporation of New York appropriated five thousand dollars. The survey was carried on for over two years. The method of study consisted in intensive, laborious examinations of original material, such as course outlines, reports of students, and other supplementary documents important in teaching by mail.

Seven well-organized chapters on various aspects of university correspondence instruction make up the body of the volume. The titles of these chapters are as follows: "Modern University Teaching," "Origin and Growth of Correspondence Teaching," "The Students, Courses, and Subjects," "Administrative Problems and Policies," "Standards and Practices," "Success of Students," and "Principles of Correspondence Teaching." An eighth chapter contains monographs on methods of teaching various subjects contributed by a large number of experienced university-extension teachers. Approximately 100 pages of the 350-page volume are filled with twenty appendixes comprising statistics, tabulations, outlines, findings of special studies, and a host of other factual data about correspondence teaching.

While the scope of the volume is limited to an intensive study of university and college correspondence teaching as found in member institutions of the National University Extension Association, it furnishes nevertheless a wealth of

¹ Walton S. Bittner and Hervey F. Mallory, *University Teaching by Mail: A Survey of Correspondence Instruction Conducted by American Universities*. New York: Macmillan Co., 1933. Pp. xvi+356. \$2.50.

valuable information and observation helpful and instructive to everyone interested in the correspondence type of teaching.

In reporting their findings, the authors have succeeded in striking a happy medium between a bulky volume of innumerable case materials and an abstract report full of generalizations and conclusions with but meager factual data for support. Enough objective data are included to elicit the confidence necessary to cause persons not connected with the investigation to accept the conclusions. With that impression in mind, the reviewer feels that the judicial treatment necessarily inherent in the chosen method of study is to be considered an asset rather than a weakness.

Throughout the volume the presentation gives evidence of the larger social perspective and educational philosophy with which the authors approached their task. The following quotations are examples.

University instruction by mail is not only a phase of teaching processes but also a development of a socialized institution—the modern university—and a significant factor in what is probably the most outstanding social phenomenon of our time—the adult-education movement [p. viii-ix].

University correspondence instruction is not a mere administrative device . . . ; it is rather a system whereby the university faculty and the university itself in its institutional aspects utilizes the mail to come in contact with students, to keep in touch with them, not only to teach them through specific courses, but to include them in the college body [p. 7].

The work as a whole is a valuable, monumental exposition of correspondence teaching as an essential part of a long-time, socialized program of education and as a legitimate and integral function of the modern university.

WM. REITZ

Education of girls.—For several years there has been a growing interest in the changing status of women in Western society. Gains in the economic independence and the social recognition of women have at times been slow, but they have been steady. Recognition of property rights separate from the husband, full suffrage, and the right to hold public office are recent developments in the direction of equality of women with men. The growing independence of women is by some people looked upon with skepticism or even with alarm, as in Hitler Germany, but it is looked upon by others as a natural result of industrialization and democratization of society. In any case, students of social problems expect a close relation between the rôle played by women in a particular society and the education provided for girls by that society. Such students will be interested in a recent volume¹ which compares the education of women in four modern nations.

¹ Yoshi Kasuya, *A Comparative Study of the Secondary Education of Girls in England, Germany, and the United States: With a Consideration of the Secondary Education of Girls in Japan*. Teachers College Contributions to Education, No. 566. New York: Teachers College, Columbia University, 1933. Pp. x+212. \$2.25.

The aim of the volume is to show the adaptation to adolescent girls of secondary education in England, Germany, and the United States, with supplementary consideration given to Japan. A chapter of thirty-six pages treats historically the social background of education for girls in the three occidental countries, tracing separately the acquisition of greater rights and liberties by women in the three countries. The next chapter follows more specifically the development of secondary education for girls in each of the three countries. Following are chapters describing recent changes, present status, and current tendencies in the education for girls in each of the countries. A short summary chapter precedes the final chapter of twenty-four pages, which is devoted to secondary education of girls in Japan, considers the westernization of Japan since the time of Commodore Perry, and proposes reforms for the education of Japanese women in the light of educational practices in the Occident.

The material, gathered through direct contact with the countries treated, is presented in sufficient detail and with enough charts and tables to give the reader a clear idea of the education of girls in the different countries. Much of the material dealing with countries other than the United States necessarily treats the girls' school as an outgrowth of an educational system intended for boys. Students of comparative education will perhaps find some new material in the chapter on Japan, but most of that dealing with the other countries will probably be familiar to them. American educators will not find much that is new in the sections dealing with the United States. Most readers will sense numerous awkward constructions, particularly in the early part of the book. A helpful bibliography of nine pages is included, with titles grouped according to countries and types of material. There is no index, but a fairly elaborate table of contents is included.

HAROLD H. PUNKE

GEORGIA STATE WOMANS COLLEGE
VALDOSTA, GEORGIA

Stimulating counsel for teachers of English.—The typical book on the teaching of English is either a collection of highly spun theories or a dry, tedious rehash of what has been written again and again. Rarely, even in these days of many books, does one have the privilege of reading a professional treatise in which practice is supported by the best that has been experimentally determined and in which the validity of both theory and practice is confirmed by numerous student productions which justify both the underlying philosophy and the methods employed. Such a book has, however, come to the writer's attention.

This stimulating book¹ is devoted chiefly to grammar and composition, with only incidental references to literature. Under the general caption "Fundamentals" the author discusses grammar, punctuation and capitalization, penmanship, spelling, and vocabulary-building. He attacks each of these much as a

¹ Howard Francis Seely, *On Teaching English*. Chicago: American Book Co., 1933. Pp. xx+392. \$1.60.

physician diagnoses a case: first, by pointing out the deplorable results of our present methods; second, by showing wherein these methods are inadequate; and third, by indicating how, in his judgment, recognized objectives may be more fully and more satisfactorily achieved.

The teacher of English, who must of necessity read what is being written in his field, in time either comes to be skeptical of the many random shots and frantic experiments that are reported in the literature of his subject or allows himself to become a taster of all nostrums—a blind experimenter who knows neither where he is going nor when he has arrived. Such a book as Seely has written should prevent either of these mistakes. After reading this book, the teacher of English should have a wholesome respect for experimentation that is carried on within proper limits, a clearer comprehension of the value and the limitations of diagnostic and achievement tests, and a deeper sense of his responsibility as a teacher of his subject than has previously been his.

Some of the outstanding excellencies of the book are its insistence that objectives be thoroughly understood by both teacher and pupil, its clear enunciation of the philosophical principles underlying the objectives enumerated, and its liberal suggestions of class exercises. The most fruitful and thought-provoking sections deal with such topics as minimum essentials, necessary changes in attitudes, discovering what grammar to teach, and the original and exhaustive treatment of oral composition.

Chapter xii, which discusses the various problems connected with written composition, should be carefully studied by the inexperienced teacher who gropes blindly at his task, by the time-server who chafes under the daily grind, and by the teacher of long experience who believes that there is nothing further for him to learn about teaching composition.

Although the author's style is not always happy and although one cannot always agree with the conclusions expressed, anyone who reads the book thoughtfully must, in all fairness, recognize it as an excellent contribution in its particular field—a professional production that covers the field without being offensively repetitious, that is theoretical without being maudlin or ephemeral.

The reviewer feels that the author has maintained his thesis: that life is the basis of expression and that English is a natural method of expressing life. If the reader gets no more than that idea from the reading of the book, his time will have been well spent.

VINCENT A. DAVIS

KANSAS STATE TEACHERS COLLEGE
EMPORIA, KANSAS

A junior high school series in English with a maximum of practice and a minimum of theory.—As its name indicates, this series of junior English textbooks,¹

¹ J. C. Tressler and Marguerite B. Sheldadine, *Junior English in Action*: Book One, pp. xiv+350, \$1.00; Book Two, pp. xiv+420, \$1.08; Book Three, pp. xiv+460, \$1.16. Boston: D. C. Heath & Co., 1933.

designed "to stimulate, entice and help young people to live on paper and in speech" (p. iii, Book Three), is dynamic throughout its three volumes. Beginning with a lively and thought-provoking discussion of the art of conversation, followed by provision for excellent practice in the art, each volume considers in turn story-telling, letter-writing, explaining, outlining, vocabulary-building, reading, and the mechanics of speech and writing. Despite this apparent sameness of content, each volume strikes surprisingly fresh and varied notes in its basic practices. Although the series is satisfactorily complete for the whole junior high school period, each book could be used without the others in the designated year. The outstanding features of the series are its constant emphasis on life-practices and its testing-teaching program. A progress graph at the back of each book furnishes incentive for increased effort. As models for compositions, pupils' themes are used rather than unattainable masterpieces.

In Book One major emphasis is placed on conversation in oral work and on the letter in writing. The grammar work conforms to modern practice by concerning itself with the effective sentence and the way to build it. In the story-telling unit lively dictations are given with directions for preparation and definite rules for scoring. The use of light and dark type makes it easy to distinguish rule and illustration from explanation and practice.

Since mastery of a few subjects rather than a smattering of many is the aim, the only new units added in Book Two are those on compound and complex sentences, on reporting, describing, using the library, and filling in printed forms. Spelling is approached scientifically, as in Book One, and lists of "demons" needing constant practice are supplied.

A thorough review of functional grammar is provided in Book Three, since "one who understands grammar is sentence-sure" (p. iv). Grammar, punctuation, and the effective sentence are linked in the teaching of participial phrases, appositives, and parenthetical expressions. In this book the verb takes its rightful place as the "engine" of the sentence. Fifty pages of exercises present attractive drill in the forms and uses of the parts of speech. Other units treat of paragraph-building, writing for publication, précis-writing, and library practice—an excellent preparation for the varied activities of the senior high school.

Without doubt, this series will appeal to junior high school pupils and to the teacher who relates his work to the everyday interests of his pupils. Almost without exception, the apt analogies are drawn from the fields of sport and mechanics. The drills are not so long as to be tiring, and great flexibility to suit pupil need and teacher preference is made possible by a rearrangement of the units. Various blazes along the "Good English Trail" point the way to desirable attainments: "One's sentence-batting average should be 1,000" (p. 224, Book One). "A blotted, messy letter is as discourteous as yawning" (p. 14, Book Two). "Who likes to listen to a person whose lower jaw, lips, and tongue are so sluggish that his speech is hard to understand?" (p. 419, Book Three).

In the judgment of the reviewer, the authors of this *different* junior-English

series have justified their rousing title by emphasizing on every page the writing and the speaking of vivid, forceful English.

PAULINE COPE

LOWER MERION SENIOR HIGH SCHOOL
ARDMORE, PENNSYLVANIA

Two outstanding textbooks in geometry.—Each of two textbooks in geometry,¹ standing out in sharp contrast to each other, has a contribution to offer to the teaching of the subject.

The questions are often asked: Does the teaching of geometry offer any disciplinary training? Does the training given in geometry transfer to other fields of reasoning? The answer given to these questions is that, as geometry is generally taught, there is not much transfer of training but that, as geometry should be taught, there would be much transfer.

Farnsworth has made what appears to be a successful attempt to supply a textbook making it possible for geometry to be taught in such a way that there would be a great deal of transfer of training into other fields. This result has been accomplished, first (the outstanding feature of the book), by making the nature of the proofs analytic throughout; second, by making a number of interesting applications immediately following the theorems on which these applications depend; and, third, by providing for informal discussions after most of the proofs. The applications are given full pages and large type, just as are the theorems. The author says that the applications present not things that could be done to illustrate geometry but things that are done and are *explainable* by geometry.

The text is organized into five books with an abundance of exercises. No corollaries are given, the assumption being that all corollaries are either theorems or exercises. The author makes the distinction between theorem and exercise very small, one of difficulty only. He states that every "original" is a theorem, and every theorem is an original to him who has never met it before. The theorems are given only to suggest ways by which to prove originals—hence the analytic method. The theorems included are all those given in the 1923 syllabus of the National Committee on Mathematical Requirements and in the entire later syllabus of the College Entrance Examination Board, as well as approximately a dozen others included because of logical sequence or because of their interesting applications. The theorems of the College Entrance Examination Board syllabus are purposely not starred because to give them distinctive marks would discount the others.

The distinct contribution offered by this textbook to the teaching of geometry is the analytic method of proof. The author gives the indirect method the proper place by saying that it is important as a last resort when the direct method fails.

¹ a) Ray Dwinell Farnsworth, *Plane Geometry*. New York: McGraw-Hill Book Co., Inc., 1933. Pp. x+258. \$1.25.

b) A. M. Welchons and W. R. Krickenberger, *Plane Geometry*, pp. xiv+370, \$1.28. *Solid Geometry*, pp. xii+252, \$1.24. Boston: Ginn & Co., 1933.

If any criticism may be offered, it is as follows: The book is rather difficult for high-school pupils. The ordinary teacher would not make the necessary selection from the numerous exercises given. The mechanical makeup of the proof lacks strength. The author says that the exact mechanical arrangement of a proof is utterly unimportant and that the figure should be drawn free hand. Hence, the proofs are given in full-line paragraphs with statements, abbreviations, references, and section numbers in black type, all strung along in a line. This arrangement seems to be in direct contradiction to the author's own

TABLE I
COMPARATIVE DATA ON TWO TEXTBOOKS IN PLANE GEOMETRY

	Farnsworth	Welchons and Krickenberger
Method of proof.....	Analytic	Synthetic
Arrangement of material.....	In 5 books	In 12 chapters
Form of proof.....	Reasons not separated	Reasons separated
College Entrance Examination Board theorems.....	Not marked	Marked
National Committee recommendations.....	Not marked	Marked
Subject matter.....	Not differentiated	Differentiated
Geometrical design.....	Not included	Included
Historical material.....	Not included	Included
Applications.....	To things that are actually done	To things that could be done
Theorems on limits.....	Proof required	Assumed without proof
Number of axioms.....	15	14
Number of assumptions.....	16	0
Number of postulates.....	0	30
Number of theorems.....	125	128
Number of corollaries.....	0	76
Number of exercises.....	746	1,434
Number of tests.....	0	36
Number of pages of text.....	254	363

statement that there is great beauty in a perfect mathematical demonstration, just as there is in a great essay or poem or painting; that the essentials for the proof are the figure, the statement of hypothesis and conclusion, the explanations of construction lines, the logical steps, and the general reason or authority for each step. This book should be hailed as a distinct progressive step in geometry-teaching.

In sharp contrast is the two-book series by Welchons and Krickenberger. These authors have broken away from the traditional five-book arrangement of plane geometry and have provided thirteen units. The theorems and exercises are arranged on a differentiated plan to provide for pupils of varying abilities. In the theorems the differentiation is made by marking those which are required by the College Entrance Examination Board with *C* or *c* and those required by the National Committee with *N* or *n*. The minimum course requires regular proofs of the theorems marked *C* or *N* and only informal proofs of those marked

c or *n*. The medium course requires full proofs of all those marked *C* and *c* or of all those marked *N* and *n*. The maximum course requires full proofs of all the propositions. The exercises are placed in groups marked *A*, *B*, or *C* for the minimum, the medium, and the maximum courses.

Each chapter is followed by two or three objective tests, numbering thirty-six in all.

The particular contribution of this textbook is the unique arrangement of subject matter into well-marked differentiated groups for individual differences. A question arises in the reviewer's mind concerning the method of treating the different theorems marked *C* and *N* when pupils in the minimum course are to do either and there may be pupils working both types in the same class.

The textbook in solid geometry by these two authors is made up on the same plan and is organized into 6 chapters and 618 originals, differentiated into two groups of difficulty, *A* and *B*.

The data in Table I show at a glance the differences between the two textbooks in plane geometry.

J. T. JOHNSON

CHICAGO NORMAL COLLEGE

Citizenship for the junior high school.—So many textbooks for the junior high school course in citizenship have been written during the last decade that the reviewer is bound to ask, "Is this just another textbook on citizenship or does the author have a new and different approach?" One cannot describe Professor Arnold's approach¹ as "new," and yet it is distinctive both as to emphasis and organization. The ideal of co-operation is emphasized in the title, in the Preface, in the Foreword to the pupils, and in the presentation of each unit. There should, consequently, be built up in the pupils' minds an appreciation of the necessity for co-operation in the adventure of community-living in its manifold aspects. The importance of an intelligent working-together is stressed in the presentation of each problem and in the suggested exercises and activities, which offer opportunities for actual co-operation in school and community citizenship. If in classroom use this book actually succeeds in developing in pupils' minds the spirit and habit of co-operation in approaching the problems of citizenship, it will have won a deserved place in the literature of junior high school social studies.

Following the current trend in secondary education, the book is organized into seven learning units, with from three to sixteen problems presented in connection with each unit. Effective use is made of the problem approach. In each case the presentation is such that the pupil should become perfectly aware of the problem, the need for a co-operative approach to its solution, and the possibilities and relative merits of various solutions. No attempt is made to dictate the solution. Rather, both in the text and in the suggested exercises and readings, the effort is made to interest pupils in serious study and investigation. Another

¹ Joseph Irwin Arnold, *Cooperative Citizenship*. Evanston, Illinois: Row, Peterson & Co., 1933. Pp. lii+716. \$1.60.

commendable feature is that for the most part problems are presented with due regard for historical development and perspective. Of the seven units, three deal with social problems, one with economic problems, one with government, one with international relations, and one with vocations.

In a presentation of sixty-three problems for study in a ninth-grade course, the greatest danger is that over-simplification in analysis and explanation may leave many inaccurate or distorted concepts in the pupils' minds (and notions gained at this age are remarkably fixed and persistent). The reviewer was especially interested in the treatment of socialism and communism. Depending of course on the teacher's understanding and presentation of the problem, this textbook should give the pupil an understanding of the common goal of the socialists and of the different programs of different groups of socialists. The explanation of communism is perhaps over-simplified and consequently less likely to convey to the pupil a clear-cut idea of the goal of the communists. The author states that communism has never been tried on a large scale although some features of Bolshevism are communistic. To say that little communism is found in the world today except in the family is, even at the ninth-grade level, hardly an adequate approach to an understanding of the Russian experiment and of the significance of communism in the modern world. In the main, however, the author has succeeded in writing a textbook well adapted for junior high school use, a task which is none too easy at best.

Teachers will be grateful for the suggestions for a small and a large classroom library and for the well-chosen questions, problems and co-operative activities, and the list of supplementary readings at the end of each problem. There is also a useful publishers' directory.

BURR W. PHILLIPS

UNIVERSITY OF WISCONSIN

CURRENT PUBLICATIONS RECEIVED

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liography, 1923-1932, by Katherine M. Cook and Florence E. Reynolds. Pp. vi+58.

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